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The Duty to Read the Unreadable

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THE DUTY TO READ THE UNREADABLE

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Abstract: The duty to read doctrine is a well-recognized building block of U.S. contract law. This doctrine holds contracting parties responsible for the written terms of their contracts, whether or not they actually read them. The application of this duty is especially tricky in the context of consumer contracts, which consumers generally do not read. Although courts routinely impose this doctrine on consumers, its application to consumer contracts is one-sided. Whereas consumers are expected and presumed to read their contracts, suppliers do not generally have a duty to draft readable contracts. This asymmetry creates a serious public policy challenge: consumers might be expected to read contracts that are, in fact, rather unreadable. This, in turn, undermines market efficiency and raises fairness concerns. Numerous scholars have suggested that consumer contracts are indeed written in a way that dissuades consumers from reading them. This Article aims to test empirically whether this concern is justified. The Article focuses on the readability of an important and prevalent type of consumer agreement: the sign-in-wrap contract. Consumers routinely accept such contracts, which have already been the focal point of many legal battles, when signing up for popular websites such as Facebook, Amazon, Uber, and Airbnb. The Article applies well-established linguistic readability tests to the five hundred most popular websites in the United States that use sign-in-wrap agreements. The results of this Article indicate, among other things, that the average readability level of these agreements is comparable to the usual score of articles in academic journals, which typically do not target the general public. These disturbing empirical findings hence have significant implications on the design of consumer contract law.

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INTRODUCTION

Are sign-in-wrap contracts—which are commonly used by firms such as Google, Facebook, Uber, and Amazon—readable? Can American consumers be expected to read these contracts? Should courts rely on the duty to read doctrine and enforce such contracts against consumers? This Article tackles these important questions by systematically and empirically testing the level of readability of highly prevalent online consumer contracts.

The duty to read doctrine—under which a contracting party has a burden to read an agreement before assenting to its terms¹—is an important building block of U.S. contract law.² Although the duty to read is a general contract law doctrine, it has interesting and important implications in the context of consumer standard form contracts. On the one hand, consumers—including prominent law professors, consumer law academics, and the Chief Justice of the United States Supreme Court³—do not read such contracts.⁴ On the other

¹ See *infra* Part I.A.

² See Roy Ryden Anderson, *Disclaiming the Implied Warranties of Habitability and Good Workmanship in the Sale of New Houses: The Supreme Court of Texas and the Duty to Read the Contracts You Sign*, 15 TEX. TECH. L. REV. 517, 544 (1984) (“The duty to read has its place in the law of contract.”); Ian Ayres & Alan Schwartz, *The No-Reading Problem in Consumer Contract Law*, 66 STAN. L. REV. 545, 548 n.9 (2014) (“Courts have routinely relied upon the duty to read doctrine in enforcing contracts.”); Shmuel I. Becher, *Asymmetric Information in Consumer Contracts: The Challenge That Is Yet to Be Met*, 45 AM. BUS. L.J. 723, 729 (2008) (“The duty to read contracts is a well-recognized common law doctrine”); Michael Giusto, *Mortgage Foreclosure for Secondary Breaches: A Practitioner’s Guide to Defining “Security Impairment,”* 26 CARDOZO L. REV. 2563, 2584 n.131 (2005) (“It is a fundamental precept of contract law that a party has a duty to read a contract”); Charles L. Knapp, *Is There a “Duty to Read”?*, 66 HASTINGS L.J. 1083, 1085 (2015) (“The notion that there is in general contract law a ‘duty to read’ . . . persists in the decisions of American courts.”); Michael L. Rustad & Thomas H. Koenig, *Wolves of the World Wide Web: Reforming Social Networks’ Contracting Practices*, 49 WAKE FOREST L. REV. 1431, 1451 (2014) (“The duty to read is a long-standing principle in Anglo-American contract law”); Jennifer L. Nusbbaum, Comment, *North Carolina’s Duty to Read: The Demise of Accountability for Transactional Attorneys?*, 92 N.C. L. REV. ADDENDUM 147, 149 (2014), https://docs.wixstatic.com/ugd/ba77b5_46831ce6df9c4dafbd635601a189eb0a.pdf [<https://perma.cc/V8TL-5VUX>] (“Courts have long recognized an individual’s duty to read a document when contracting with another party.”).

³ See Richard A. Epstein, *Contract, Not Regulation: UCITA and High-Tech Consumers Meet Their Consumer Protection Critics*, in CONSUMER PROTECTION IN THE AGE OF THE ‘INFORMATION ECONOMY,’ 205, 227 (Jane K. Winn ed., 2006) (“[I]t seems clear that most consumers—of whom I am proudly one—never bother to read these terms anyhow: we know what they say on the issue of firm liability, and adopt a strategy of ‘rational ignorance’ to economize on the use of our time.”); Jeff Sovern, *The Content of Consumer Law Classes III*, 22 J. CONSUMER & COM. L. 2, 6 (reporting survey results according to which 57% of consumer law professors “rarely or never” read consumer contracts); Debra Cassens Weiss, *Chief Justice Roberts Admits He Doesn’t Read the Computer Fine Print*, A.B.A. J. (Oct. 20, 2010), http://www.abajournal.com/news/article/chief_justice_roberts_admits_he_doesnt_read_the_computer_fine_print [<https://perma.cc/964P-EGVW>].

⁴ See, e.g., Yannis Bakos et al., *Does Anyone Read the Fine Print? Consumer Attention to Standard-Form Contracts*, 43 J. LEGAL STUD. 1, 3 (2014) (providing empirical data to demonstrate that virtually no consumers read end user license agreements); Shmuel I. Becher & Esther Unger-Aviram,

hand, courts routinely apply the duty to read to consumer contracts,⁵ including online boilerplate agreements.⁶

Many share a strong intuition that consumer standard form contracts, which bombard us on a daily basis, are unreasonably lengthy and complicated.⁷ Yet under U.S. law, the duty to read is unilateral: although consumers are presumed to read contracts, there is no general duty on suppliers to provide consumers with readable contracts.⁸ Although some states have enacted plain language laws, these are often limited in scope and generally lack objective criteria defining a “readable” text.⁹ Given this legal reality, this Article empirically assesses whether consumer contracts—which consumers are legally presumed to read—are readable.¹⁰

This Article specifically tests, for the first time, the readability of a prevalent type of consumer agreement: the sign-in-wrap contract. As explained in more detail below,¹¹ in such contracts users allegedly agree to the website’s

The Law of Standard Form Contracts: Misguided Intuitions and Suggestions for Reconstruction, 8 DEPAUL BUS. & COM. L.J. 199, 206 (2010) (providing empirical data that most consumers are not likely to read typical consumer contracts *ex ante*); Clayton P. Gillette, *Rolling Contracts as an Agency Problem*, 2004 WIS. L. REV. 679, 680 (“[C]ommentators agree that buyers, or the vast majority of them, do not read the terms presented to them by sellers.”) (footnotes omitted); Lewis A. Kornhauser, Comment, *Unconscionability in Standard Forms*, 64 CAL. L. REV. 1151, 1163 (1976) (“In general the consumer will not have read any of the clauses, and most will be written in obscure legal terms.”); *see also* Stacy-Ann Elvy, *Commodifying Consumer Data in the Era of the Internet of Things*, 59 B.C. L. REV. 423, 442 (2018) (noting that, in the context of internet privacy policies, consumers often neither read nor understand contractual provisions).

⁵ *See, e.g.*, Ayres & Schwartz, *supra* note 2, at 548 n.10 (providing examples of the application of the duty to read in the context of consumer contracts); *see also* Wayne R. Barnes, *Toward a Fairer Model of Consumer Assent to Standard Form Contracts: In Defense of Restatement Subsection 211(3)*, 82 WASH. L. REV. 227, 230 (2007) (“Contract law has always assumed that consumers have a duty to read the contracts”); Becher, *supra* note 2, at 730 n.32 (“Indeed, applying a strict duty to read contracts, including [standard form contracts], is currently a dominant approach taken by courts.”).

⁶ *See* Rustad & Koenig, *supra* note 2, at 1453 (noting that “courts have expanded the duty to read . . . to the world of electronic boilerplate”).

⁷ *Cf.* Barnes, *supra* note 5, at 233–34, 237 (discussing the prevalence of standard form contracts and asserting that consumers are unlikely to be able to comprehend their terms).

⁸ *See infra* Part I.A.

⁹ *See, e.g.*, HAW. REV. STAT. § 487A-1 (2018) (containing Hawaii’s plain language in consumer transactions statute, but providing exclusions to which the statute does not apply); MINN. STAT. § 325G.31 (2012) (requiring nearly all consumer contracts to be “clear[ly] and coherent[ly]” written, but failing to provide objective criteria); MONT. CODE ANN. § 30-14-1103 (2017) (laying out the plain language requirements for contracts); N.J. STAT. ANN. § 56:12-2 (West 2012 & Supp. 2019) (requiring particular consumer contracts to be written in an “easily readable way”); N.Y. GEN. OBLIG. LAW § 5-702 (McKinney 2012 & Supp. 2019) (providing that certain written agreements shall be “[w]ritten in a clear and coherent manner using words with common and every day meanings”); OR. REV. STAT. § 180.545 (2017) (describing Oregon’s plain language standards).

¹⁰ *See infra* Part II.

¹¹ *See infra* Part I.B.

terms by signing up for the website. This type of contract is rather ubiquitous,¹² and it is routinely “accepted” by consumers when they sign up for various online websites.¹³ Furthermore, it has been at the forefront of many legal battles, involving prominent companies such as Facebook, Amazon, Uber, and Airbnb.¹⁴

Part I of this Article provides the theoretical context for the empirical test of this study.¹⁵ It presents the duty to read doctrine and its traditional justifications, which are based on the assumption that consumer contracts are indeed readable. Thereafter, it briefly presents the definition and typical content of a consumer sign-in-wrap agreement, which is the focus of this study’s empirical test. Subsequently, it discusses prior empirical studies on consumer contract readability and the contribution of this Article to the existing literature. Part II presents the empirical test of this study.¹⁶ It reviews the data that underlie the test and discusses its methodology. It then details the results of this study’s test, which indicate that sign-in-wrap contracts are generally unreadable. Part III discusses the normative policy and legal implications of the empirical results.¹⁷ It further explains the importance and the less obvious implications of readability, clarifies why market forces cannot suffice to discipline drafters of consumer contracts, and situates readability in a wider, more holistic approach to consumer contracts.

¹² Among the most popular 988 websites in the United States, five hundred (about 51%) use sign-in-wrap contracts. See *infra* Part II.A.

¹³ See *Selden v. Airbnb, Inc.*, No. 16-cv-00933 (CRC), 2016 WL 6476934, at *4 (D.D.C. Nov. 1, 2016) (commenting that “many internet websites . . . now use ‘sign-in-wraps’” whereby consumers assent to the providers’ terms by registering to use the websites); Colin P. Marks, *Online and “as Is,”* 45 PEPP. L. REV. 1, 11, 37–38 (2017) (noting that sign-in-wrap agreements, which “appear[] to be gaining popularity among online vendors,” are “somewhat prolific” and explaining that purveyors of goods seem to be shifting to the use of sign-in-wrap contracts).

¹⁴ Courts have not always explicitly labeled sign-in-wrap agreements as such. See, e.g., *Plazza v. Airbnb, Inc.*, 289 F. Supp. 3d 537, 552–53 (S.D.N.Y. 2018); *Cullinane v. Uber Techs., Inc.*, No. 14-14750-DPW, 2016 WL 3751652 (D. Mass. July 11, 2016), *rev’d*, 893 F.3d 53 (1st Cir. 2018); *In re Facebook Biometric Info. Privacy Litig.*, 185 F. Supp. 3d 1155, 1166 (N.D. Cal. 2016); *Nicosia v. Amazon.com, Inc.*, 84 F. Supp. 3d 142, 150 (E.D.N.Y. 2015), *aff’d in part, vacated in part*, 834 F.3d 220 (2d Cir. 2016); *Fteja v. Facebook, Inc.*, 841 F. Supp. 2d 829, 834–35 (S.D.N.Y. 2012); see also *infra* Part I.B.

¹⁵ See *infra* notes 18–89 and accompanying text.

¹⁶ See *infra* notes 90–154 and accompanying text.

¹⁷ See *infra* notes 155–238 and accompanying text.

I. THEORETICAL BACKGROUND

A. *The Unilateral Duty to Read*

Under the duty to read doctrine, contracting parties are presumed to have read the contract before agreeing to its terms.¹⁸ Failure to fulfill this duty has three main legal implications. First, a party is normally bound by the terms of the contract notwithstanding its failure to read them.¹⁹ Second, refraining from reading the contract does not constitute grounds for voiding the contract.²⁰ Third, failure to read the contract does not trigger a contractual mistake necessary for contract reformation.²¹

In the context of consumer contracts, the duty to read is traditionally based on both economic and fairness justifications. From an economic standpoint, it is assumed that the duty to read may produce several important social

¹⁸ *THI of N.M. at Vida Encantada, LLC v. Lovato*, 848 F. Supp. 2d 1309, 1325 (D.N.M. 2012) (quoting *THI of N.M. at Hobbs Ctr., LLC v. Patton*, No. 11-537 LH/CG, 2012 WL 112216, at *22 (D.N.M. Jan. 3, 2012)) (“Each party to a contract . . . has a duty to read and familiarize herself with its contents before signing it . . .”); *Rosenfeld v. JPMorgan Chase Bank, N.A.*, 732 F. Supp. 2d 952, 965 (N.D. Cal. 2010) (“Plaintiff has a duty to read the terms of a contract before signing.”); *Liggatt v. Emp’rs Mut. Cas. Co.*, 46 P.3d 1120, 1125 (Kan. 2002) (“A party to a contract has a duty to read the contract before signing it . . .”); *Bailey v. Estate of Kemp*, 955 So. 2d 777, 783 (Miss. 2007) (quoting *MS Credit Ctr., Inc. v. Horton*, 926 So. 2d 167, 177 (Miss. 2006)) (“[P]arties to a contract have an inherent duty to read the terms of a contract prior to signing . . .”).

¹⁹ *See Heller Fin., Inc. v. Midwhey Powder Co.*, 883 F.2d 1286, 1292 (7th Cir. 1989) (“[I]t is no defense to say, ‘I did not read what I was signing.’”); *Faur v. Sirius Int’l Ins. Corp.*, 391 F. Supp. 2d 650, 658 (N.D. Ill. 2005) (“‘I did not read what I was signing’ will not be considered a valid defense.”); *Rosenbaum v. Tex. Energies, Inc.*, 736 P.2d 888, 892 (Kan. 1987) (“[A] person who signs a written contract is bound by its terms regardless of his or her failure to read and understand its terms.”); *MS Credit Ctr., Inc.*, 926 So. 2d at 177 (noting that a party may not avoid a written contract simply because of the failure to read its contents); *Simeone v. Simeone*, 581 A.2d 162, 165 (Pa. 1990) (“Contracting parties are normally bound by their agreements, without regard to whether the terms thereof were read . . .”); John D. Calamari, *Duty to Read—A Changing Concept*, 43 FORDHAM L. REV. 341, 341 (1974) (“[A] party who signs an instrument manifests assent to it and may not later complain that he did not read the instrument . . .”); Kaustuv M. Das, *Forum-Selection Clauses in Consumer Clickwrap and Browsewrap Agreements and the “Reasonably Communicated” Test*, 77 WASH. L. REV. 481, 485 (2002) (explaining that parties will be bound to a contract’s terms even if they do not read its provisions).

²⁰ *See Williamson v. Pub. Storage, Inc.*, No. 3:03CV1242 (RNC), 2004 WL 491058, at *3 (D. Conn. 2004) (asserting that the failure to read a contract prior to signing it does not give rise to grounds to void a contract); *MS Credit Ctr., Inc.*, 926 So. 2d at 177 (stating that the failure to read a contract does not enable a party to “avoid” the contract).

²¹ *RS & P/WC Fields Ltd. P’ship v. BOSP Invs.*, 829 F. Supp. 928, 969 (N.D. Ill. 1993) (“[F]ailure to read the terms of a negotiated contract does not rise to the level of mutual mistake necessary for contract reformation.”); *B. L. Ivey Constr. Co. v. Pilot Fire & Cas. Co.*, 295 F. Supp. 840, 845 (N.D. Ga. 1968) (“[N]egligence in not reading [a contract] before it is sent to one who acted in good faith can bar reformation by the negligent party.”); *LG Mayfield LLC v. U.S. Liab. Ins. Grp.*, 88 N.E.3d 393, 404 (Ohio Ct. App. 2017) (“[A] court should not reform an insurance policy where the party seeking reformation has failed to fulfill his duty to read the policy.”); *Priore v. State Farm Fire & Cas. Co.*, No. 99692, 2014 WL 811776, at ¶ 15 (Ohio Ct. App. Feb. 27, 2014).

benefits. To begin with, it potentially increases the probability that consumers will read a contract before signing it.²² Without such a duty and its accompanying legal implications, after accepting the contract consumers could challenge unfavorable contract terms that they did not read.²³ Consequently, a consumer would have greater incentive to avoid reading the contract terms.²⁴ In contrast, under the duty to read, consumers are legally bound to the contract terms, even if they failed to read them.²⁵ As a result, the consumer will arguably be more likely to read the contract than under a no-duty to read regime.²⁶

By inducing consumers to review the contract, the duty to read may increase the probability that the transaction is based on a well-informed decision.²⁷ This, in turn, promotes consumer welfare.²⁸ Moreover, contract reading

²² See Becher, *supra* note 2, at 729 (asserting that “the application of the duty to read provides contracting parties with an incentive to read and understand contracts before entering them”); Omri Ben-Shahar, *The Myth of the ‘Opportunity to Read’ in Contract Law*, 5 EUR. REV. CONT. L. 1, 7 (2009) (emphasizing that the duty to read “is a method to shift the burden of information acquisition to the passive party”).

²³ See Russell Korobkin, *Bounded Rationality, Standard Form Contracts, and Unconscionability*, 70 U. CHI. L. REV. 1203, 1269 (2003) (“If buyers could preserve the right to challenge ex post any contract term of which they were unaware ex ante, they would have a perverse incentive to avoid learning the content of all terms.”).

²⁴ *Id.*

²⁵ See *supra* note 19 and accompanying text.

²⁶ Stewart Macaulay, *Private Legislation and the Duty to Read—Business Run by IBM Machine, the Law of Contracts and Credit Cards*, 19 VAND. L. REV. 1051, 1058 (1966) (“If one knows he will be legally bound to what he signs, he will take care to protect himself . . .”).

²⁷ See *id.* (noting that consumers will safeguard their interests if they will be held to their contracts). This, of course, assumes that firms will follow the written contract, rather than deviate from it. At times, however, firms’ behavior differs from the contractual language. For a discussion of this phenomenon and its application, see Lucian A. Bebchuk & Richard A. Posner, *One-Sided Contracts in Competitive Consumer Markets*, 104 MICH. L. REV. 827, 831 (2006) (describing an example of a firm’s deviation from its one-sided contract terms); Shmuel I. Becher & Tal Z. Zarsky, *Minding the Gap*, 51 CONN. L. REV. 69, 73–74 (2019) (proposing that under some circumstances firms’ lenient approach and willingness to deviate from their one-sided contracts may have surprising and harmful consequences); Lisa Bernstein & Hagay Volvovsky, *Not What You Wanted to Know: The Real Deal and the Paper Deal in Consumer Contracts—Comment on the Work of Florencia Marotta-Wurgler*, 12 JERUSALEM REV. LEGAL STUD. 128, 129 (2015) (proposing that examinations of certain consumer contracts should focus on “the terms of the *real deal*—that is, the way sellers actually behave in the shadow of both written contracts and the wide variety of other forces that may constrain or influence their behavior” rather than the terms agreed to on paper); Richard Craswell, *Taking Information Seriously: Misrepresentation and Nondisclosure in Contract Law and Elsewhere*, 92 VA. L. REV. 565, 576–77 (2006) (considering the need for disclosures regarding the gap between the written contract and firms’ actual behavior); Jason Scott Johnston, *The Return of Bargain: An Economic Theory of How Standard-Form Contracts Enable Cooperative Negotiation Between Businesses and Consumers*, 104 MICH. L. REV. 857, 858–59 (2006).

²⁸ Becher, *supra* note 2, at 729–30 (maintaining that an incentive to read the contract “increases the likelihood that agreements will be mutually informed and, thus, that the transaction will indeed promote the welfare of both contracting parties”); Macaulay, *supra* note 26, at 1058 (asserting that

can potentially clarify the parties' obligations and rights.²⁹ Thus, the duty to read can also reduce the probability of costly disputes arising from contractual misunderstandings.³⁰ Overall, the duty to read has some economic benefits, and it potentially promotes efficient reliance on contracts.³¹

The other possible justification for adopting a contract law duty to read rests on a fairness consideration. According to this justification, if a consumer could have read the contract but instead chose not to do so, it would be fair to prevent him from avoiding the contract simply due to his failure to have read it.³² The duty to read supports a fairness rationale whereby people should be accountable for their decisions, including the decision to accept a contract without reading it.³³

Some important underlying rationales support the duty to read. These rationales are based, however, on one central implicit condition: that consumers can read and comprehend the contract.³⁴ If the contract is unreadable, the major economic and fairness justifications that underlie the duty become questionable.

First, from an economic perspective, if the contract is unreadable, the duty is unlikely to induce consumers to read it. In fact, a consumer may be rationally deterred from reading an illegible contract given its high reading

under the duty to read "more bargains will approach the economists' ideal where both leave the bargaining table in a better position than when the negotiations began").

²⁹ See Macaulay, *supra* note 26, at 1058 (providing that the duty to read will reduce the chances of dispute because reading and understanding the agreement would clarify each party's obligations as well as what loss each would experience in the event of a particular risk).

³⁰ See *id.* (noting that the duty to read will reduce the number of disputes that arise during a transaction).

³¹ See, e.g., JOSEPH M. PERILLO, *CONTRACTS* 360 (7th ed. 2014) ("[N]o one could rely on a signed document if the other party could avoid the transaction by not reading . . . the record."); Barnes, *supra* note 5, at 246 (explaining the efficiency of the duty to read principle); Calamari, *supra* note 19, at 342 (discussing the implications of the lack of a duty to read).

³² See Ayres & Schwartz, *supra* note 2, at 549 ("The duty to read doctrine is contract law's analog to the assumption of risk doctrine in tort law. A buyer who could have read but did not assumes the risk of being bound by any unfavorable terms.").

³³ Becher, *supra* note 2, at 730 (stating that the duty to read reflects that individuals are responsible for their actions, which "includ[es] the decision not to read (or fully understand)" the terms of an agreement); Justin P. Green, Comment, *The Consumer-Redistributive Stance: A Perspective on Restoring Balance to Transactions Involving Consumer Standard-Form Contracts*, 46 AKRON L. REV. 551, 567 (2013) ("Other more general justifications for the duty to read include the belief that people should be accountable for their decisions, including the decision to sign a contract without reading it . . .").

³⁴ See Melvin Aron Eisenberg, *Text Anxiety*, 59 S. CAL. L. REV. 305, 311 (1986) (commenting on the disconnect between contract law's duty to read and the hard-to-comprehend contractual agreements to which the duty is applied); Alan M. White & Cathy Lesser Mansfield, *Literacy and Contract*, 13 STAN. L. & POL'Y REV. 233, 263 (2002) (noting that certain kinds of contracts are "hopelessly unreadable, and the pretense of imposing a duty to read is simply too absurd to sustain for many judges").

costs.³⁵ In addition, if the contract is difficult to understand, the duty to read may not necessarily increase the probability that the transaction will be based on a well-informed decision.³⁶ Consequently, the unreadable contract will not necessarily promote consumer welfare. Furthermore, an unreadable contract is unlikely to clarify consumers' rights and duties.³⁷ Thus, the duty to read is unlikely to reduce costly disputes caused by contractual misapprehensions.

Second, if the contract is unreadable, the fairness justification that supports the duty to read is also dubious. There is no legitimate reason to hold consumers accountable for terms they justifiably decided not to read.³⁸ In fact, when the contract is unreadable, the duty imposed on consumers to read the illegible contract becomes unfair.³⁹

Put simply, for the duty to read to be fair and efficient, consumers must be able to read their contracts. As noted, however, the duty to read is not accompanied by another corresponding duty that requires suppliers to provide readable contracts. Stated differently, the duty to read is one-sided: the burden is placed only on consumers, who are assumed to comply with the duty.⁴⁰

This legal reality generates an important empirical question: are consumer contracts, governed by a duty to read, actually readable? We examine this question by focusing on an important type of consumer contract: sign-in-wrap. The definition and features of this contract are explained next.⁴¹

³⁵ See Ben-Shahar, *supra* note 22, at 7 (“[I]f the cost of reading is not too great . . . then reading is indeed a reasonable ‘precaution’ one should take before entering a contract. . . . However, . . . when reading a contract requires a significant investment of resources—the cost benefit analysis changes.”); Eisenberg, *supra* note 34, at 309 (describing as “inefficient” an individual’s review of texts that she cannot comprehend).

³⁶ See Becher, *supra* note 2, at 734 (asserting that only when consumers are able to comprehend their standard form contracts might the duty to read lessen information asymmetry).

³⁷ See Eisenberg, *supra* note 34, at 309 (asserting that even “experts” frequently cannot understand the meaning of complex language in consumer contracts).

³⁸ See Ben-Shahar, *supra* note 22, at 7–8 (“Why would we hold someone liable, then, for failing to take care measures that are recognized as excessively costly? . . . [I]t is not reasonable to impose a duty to read the long boilerplate.”).

³⁹ Heather Daiza, *Wrap Contracts: How They Can Work Better for Businesses and Consumers*, 54 CAL. W. L. REV. 201, 211–12 (2017) (stating that the duty to read becomes “conceptually unfair” when consumer contracts are incomprehensible).

⁴⁰ See NANCY S. KIM, *WRAP CONTRACTS: FOUNDATIONS AND RAMIFICATIONS* 176 (2013) (stressing that although courts impose a duty to read upon the non-drafter of a contract, they do not impose upon the drafter a “duty to draft reasonably”); Rustad & Koenig, *supra* note 2, at 1454 (noting the lack of duty for suppliers to provide “readable consumer contracts”).

⁴¹ See *infra* notes 42–73 and accompanying text.

B. Consumer Sign-in-Wrap Contracts

Sign-in-wrap contracts are a relatively new phenomenon.⁴² This Section explains what such contracts are. It also clarifies how they differ from other, older types of online consumer contracts.

Firms that operate online offer consumers a few prominent types of contracts, including clickwrap, browsewrap, and sign-in-wrap. Under a clickwrap agreement, users are explicitly presented with the entire terms of the agreement; only then are they able (and required) to click on a button labeled “I accept” or “I agree.”⁴³ Under a browsewrap agreement, the website’s terms of use are normally merely posted on the website via a hyperlink at the bottom of the screen, and the user assents to the terms by using the site.⁴⁴ That is, the website usually does not attempt to bring the contract terms to the user’s attention.⁴⁵

A sign-in-wrap contract is commonly defined as an agreement that an online website requires its users to accept before they sign up to use the website’s services.⁴⁶ Under such a contract, the website usually explicitly states

⁴² Andrew Lind, *The Sign-in Wrap Contract: A New Type of Online Contract*, CORNEY & LIND LAWYERS BLOG (Feb. 26, 2018), <https://www.lawexperts.com.au/commercial-law/sign-wrap-contract-new-type-online-contract/> [<https://perma.cc/P2W9-VE5N>] (describing the sign-in-wrap contract as a “relatively new” online contractual agreement); *Internet Agreements to Arbitrate: Know the Four “Wraps,”* LITE DEPALMA GREENBERG LAW BLOG (Dec. 1, 2016), <http://www.litedepalma.com/internet-agreements-to-arbitrate-know-the-four-wraps> [<https://perma.cc/SZR7-V7QU>] (describing sign-in-wrap agreements as “the new kid on the block” and noting that courts have only recently begun to acknowledge them).

⁴³ *Nguyen v. Barnes & Noble, Inc.*, 763 F.3d 1171, 1175–76 (9th Cir. 2014) (noting that click-wrap agreements require users to select “I agree” following a showing of the terms and conditions); *United States v. Drew*, 259 F.R.D. 449, 462 n.22 (C.D. Cal. 2009) (“Clickwrap agreements require a user to affirmatively click a box on the website acknowledging awareness of and agreement to the terms of service before he or she is allowed to proceed with further utilization of the website.”); Erin Canino, Note, *The Electronic “Sign-in-Wrap” Contract: Issues of Notice and Assent, the Average Internet User Standard, and Unconscionability*, 50 U.C. DAVIS L. REV. 535, 539 (2016) (explaining that, under a clickwrap agreement, a user must agree to a website’s terms and conditions by checking “I agree” on the website).

⁴⁴ *Meyer v. Uber Techs., Inc.*, 868 F.3d 66, 75 (2d Cir. 2017) (stating that a browsewrap agreement “generally post[s] terms and conditions on a website via a hyperlink at the bottom of the screen”); see *Berkson v. Gogo LLC*, 97 F. Supp. 3d 359, 400 (E.D.N.Y. 2015) (referring to an earlier court that described one particular sign-in-wrap as a combination of a browsewrap and clickwrap).

⁴⁵ See Robert V. Hale II, *Recent Developments in Online Consumer Contracts*, 71 BUS. LAW. 353, 357 (2015) (noting that browsewrap agreements do not draw the user’s attention to the terms).

⁴⁶ *McKee v. Audible, Inc.*, No. CV 17-1941-GW(EX), 2017 WL 4685039, at *6 (C.D. Cal. July 17, 2017) (stating that courts commonly refer to agreements in which websites “contain a disclosure statement that indicates if a user signs up for a given service they accept the terms of service” as sign-in-wrap agreements); *Selden*, 2016 WL 6476934, at *4 (noting that in sign-in-wrap agreements, a consumer “signs up to use an internet product or service”); *Cullinane*, 893 F.3d at 61 n.10 (explaining that under a sign-in-wrap agreement, a user agrees to a website’s terms simply by registering to use the website); Beatrice Kelly, *The (Social) Media Is the Message: Theories of Liability for New Media*

that by signing up to the website, the user agrees to the contract.⁴⁷ The user can normally view the contract terms by clicking a hyperlink, which is located next to a sign-up button displayed on the screen.⁴⁸ This hyperlink is often labeled by the website as “Conditions of Use,” “Terms of Service,” or simply “Terms.”

Accordingly, the sign-in-wrap contract should be distinguished from its two (older) “siblings,” clickwrap and browsewrap contracts. A sign-in-wrap agreement differs from a clickwrap in that the user can click the sign-up button without being explicitly presented with the entire terms of the agreement, which are available via a hyperlink.⁴⁹ In addition, unlike clickwrap agreements that require users to click “I agree,” sign-in-wraps may only state that by signing up to the website the user agrees to the contract.⁵⁰ Sign-in-wraps also differ from browsewraps in that they explicitly notify the user that signing up to the website means assenting to contract terms.⁵¹

In short, sign-in-wrap contracts combine the process of signing up for a website with agreeing to its terms and conditions. Sign-in-wrap contracts can therefore be viewed as a blend of clickwrap contracts, where users are required to tick or click on “I Agree,” and browsewrap contracts, where users presumably accept the website’s terms and conditions merely by using it.⁵²

Sign-in-wrap contracts often include a set of clauses that can significantly affect the user’s legal rights and duties. These typically include:

Artists, 40 COLUM. J.L. & ARTS 503, 514 n.83 (2017) (clarifying that in sign-in-wrap agreements “users assent to the agreement by signing up to use the website”).

⁴⁷ *Meyer*, 868 F.3d at 75–76 (stating that sign-in-wrap agreements inform the consumer that he or she assents to the terms of use by signing up to use the website); *TopstepTrader, LLC v. OneUp Trader, LLC*, No. 17 C 4412, 2018 WL 1859040, at *3 (N.D. Ill. Apr. 18, 2018) (noting that, amidst the registration process, sign-in-wrap agreements often display language such as, “[b]y signing up for an account with [website provider], you are accepting the [website]’s terms of service”).

⁴⁸ *TopstepTrader, LLC*, 2018 WL 1859040, at *3 (explaining that sign-in-wrap agreements provide a hyperlink to the terms of service); Hale, *supra* note 45, at 357 (noting that sign-in-wrap agreements make the terms accessible by means of a hyperlink).

⁴⁹ *Fteja*, 841 F. Supp. 2d at 838 (explaining that Facebook’s online agreement, which is unlike some clickwrap contracts and has the characteristics of a sign-in-wrap agreement, enables the user to click to agree, regardless of whether the user has received the terms); *see also Berkson*, 97 F. Supp. 3d at 400 (discussing the distinctions between clickwraps and sign-in-wraps).

⁵⁰ *Cullinane*, 2016 WL 3751652, at *6 (noting that, unlike clickwrap agreements, sign-in-wraps do not utilize an “I accept” box); Hale, *supra* note 45, at 357 (“[The] ‘sign-in-wrap’ differs from clickwrap, in that the latter requires the user to click on a button labeled ‘I Agree’ or the like, while the former only states that, if the user proceeds to the next step of the online process, she will be deemed to accept the terms”); Marks, *supra* note 13, at 11–12 (explaining that, in contrast to clickwrap contracts, sign-in-wraps only alert users to a website’s terms of use when the user initiates the website’s registration or checkout procedures).

⁵¹ *See Hale*, *supra* note 45, at 357 (“‘Sign-in-wrap’ . . . directly confronts the user with a statement that proceeding will be deemed assent to terms”); Marks, *supra* note 13, at 12 (explaining that sign-in-wraps are “more explicit” than browsewraps).

⁵² *See Berkson*, 97 F. Supp. 3d at 400 (referring to an earlier court that described one particular sign-in-wrap as a combination of a browsewrap and clickwrap).

- 1) an intellectual property clause, which informs users that the website data is protected under copyright law;⁵³
- 2) a prohibited use clause, which outlines prohibited actions, such as database scraping;⁵⁴
- 3) a modification clause, which allows the website to modify the terms of the contract;⁵⁵
- 4) a termination clause, which specifies the circumstances under which the website can deactivate user accounts;⁵⁶
- 5) a limitation of liability clause, which stipulates the degree of legal exposure for the website in actions arising from website usage;⁵⁷
- 6) a disclaimer clause, which states that the website services are provided to the users without warranties of any kind;⁵⁸
- 7) a class action waiver clause, under which the user agrees to abstain from filing a class action lawsuit against the website;⁵⁹
- 8) an arbitration clause, which mandates arbitration of disputes concerning the user's rights and duties;⁶⁰
- 9) a forum-selection clause, which establishes the geographic location for litigation between the parties;⁶¹
- 10) a governing law clause, which specifies which law will govern a dispute between the parties;⁶² and
- 11) a time bar clause, which sets a time period within which the user is entitled to file any lawsuit against the website.⁶³

⁵³ See, e.g., *Terms of Service* art. 5.A, YOUTUBE (May 25, 2018), <https://www.youtube.com/static?template=terms&gl=US> [<https://perma.cc/88WL-8E5G>].

⁵⁴ See, e.g., *Zillow Terms of Use* art. 5, ZILLOW (Aug. 12, 2019), <https://www.zillow.com/corp/Terms.htm> [<https://perma.cc/9YHW-PE5M>].

⁵⁵ See, e.g., *Terms of Use* art. 4.1, FACEBOOK (July 31, 2019), <https://www.facebook.com/legal/terms/update> [<https://perma.cc/7V6E-B2G6>].

⁵⁶ See, e.g., *Terms of Service* art. 14, TWITCH (Apr. 16, 2019), <https://www.twitch.tv/p/legal/terms-of-service/#14-termination> [<https://perma.cc/9WAA-UMY5>].

⁵⁷ See, e.g., *Terms of Service* art. 8.c, QUORA (Oct. 23, 2018), <https://www.quora.com/about/tos#> [<https://perma.cc/SFW8-WCTN>].

⁵⁸ See, e.g., *Reddit User Agreement* art. 11, REDDIT (Sept. 24, 2018), <https://www.redditinc.com/policies/user-agreement> [<https://perma.cc/WV2X-X52T>].

⁵⁹ See, e.g., *Netflix Terms of Use* art. 7, NETFLIX (Apr. 24, 2019), <https://help.netflix.com/legal/terms-of-use> [<https://perma.cc/5B3Z-A4M4>].

⁶⁰ See, e.g., *Walmart.com Terms of Use* art. 20, WALMART (July 25, 2019), https://help.walmart.com/app/answers/detail/a_id/8 [<https://perma.cc/TZ8Z-7JZ9>].

⁶¹ See, e.g., *Terms of Service* art. 13, YELP (Mar. 29, 2019), <https://www.yelp.com/static?p=tos> [<https://perma.cc/2EKM-PC85>].

⁶² See, e.g., *User Agreement* art. 17.A, EBAY (May 30, 2019), <https://www.ebay.com/help/policies/member-behaviour-policies/user-agreement?id=4259#17.%20Legal%20Disputes> [<https://perma.cc/95NY-YQB6>].

Sign-in-wrap agreements and the duty to read them have already been at the forefront of various legal battles.⁶⁴ These battles frequently involve well-known companies.⁶⁵ For example, in *Fteja v. Facebook*, a Facebook user claimed that his account was deactivated by the website because of his “religion and ethnicity, specifically that he is a Muslim and his name is Mustafa.”⁶⁶ Although the user filed his civil rights suit in New York state court, Facebook subsequently removed the action to federal court.⁶⁷ Facebook’s sign-in-wrap contract,⁶⁸ however, contained a forum selection clause that stated that any claim against Facebook must be resolved exclusively in Santa Clara County, California.⁶⁹

The user denied reading the sign-in-wrap contract before signing up for his Facebook account.⁷⁰ The court, nonetheless, applied the duty to read doctrine. The court explained that a party is not excused from a contract simply for failing to read its terms.⁷¹ For this and other reasons, the court transferred the user’s action to a court in California.⁷² Because of the lack of a general duty imposed on websites to draft readable contracts, the court did not consider whether Facebook’s sign-in-wrap agreement was in fact readable.⁷³

C. Prior Empirical Research

In spite of the ubiquity of sign-in-wraps, their readability has not yet been systematically analyzed.⁷⁴ This Article addresses this gap by empirically testing the readability of five hundred highly popular sign-in-wraps. In doing so, it

⁶³ See, e.g., *Terms of Service* art. 13, TUMBLR (May 15, 2018), <https://www.tumblr.com/policy/en/terms-of-service> [<https://perma.cc/G8VW-BLT9>] [hereinafter *Tumblr Terms of Service*].

⁶⁴ See Canino, *supra* note 43, at 541–46 (surveying sign-in-wrap litigation).

⁶⁵ See, e.g., *Plazza*, 289 F. Supp. 3d at 537; *Cullinane*, 2016 WL 3751652, at *1 (expounding upon litigation involving Uber Technologies, Inc.); *In re Facebook Biometric Info. Privacy Litig.*, 185 F. Supp. 3d at 1155; *Nicosia*, 84 F. Supp. 3d at 142; *Fteja*, 841 F. Supp. 2d at 829; see also *Starke v. Gilt Groupe, Inc.*, No. 13 Civ. 5497(LLS), 2014 WL 1652225, at *2–*3 (S.D.N.Y. Apr. 24, 2014).

⁶⁶ 841 F. Supp. 2d at 831.

⁶⁷ *Id.* at 831–32.

⁶⁸ Though the court did not explicitly label Facebook’s agreement a sign-in-wrap contract, the facts of the case indicate that it was such a contract. See *id.* at 835 (noting that the statement “[b]y clicking Sign Up, you are indicating that you have read and agree to the Terms of Service” appeared beneath the sign up button).

⁶⁹ *Id.* at 834.

⁷⁰ *Id.* at 836–37.

⁷¹ *Id.* at 839.

⁷² *Id.* at 844.

⁷³ See *id.* at 839 (applying the duty to read to Facebook’s sign-in-wrap agreement, but failing to consider whether it was readable).

⁷⁴ Cf. Marks, *supra* note 13, at 37–38 (explaining that sign-in-wraps have become increasingly prevalent).

expands the efforts of two other major scholarly studies that examined the readability of other types of consumer contracts.

The first important study, conducted by Professors Marotta-Wurgler and Taylor, measured the readability level of 264 online End User License Agreements (EULAs) found with software products.⁷⁵ Most of these EULAs came from browsewrap and clickwrap agreements.⁷⁶ The study found that EULAs were difficult to read.⁷⁷

The second significant study, conducted by Professors Rustad and Koenig, examined the readability level of the Terms of Use (TOUs) of 329 U.S. and foreign social media websites.⁷⁸ These TOUs mainly came, once again, from browsewrap and clickwrap agreements.⁷⁹ For each website in the sample, the study tested the readability level of its entire TOUs.⁸⁰ In addition, it examined the readability of three contractual clauses included in these TOUs: warranty disclaimers, limitations of liability, and arbitration provisions.⁸¹ The authors found that the TOUs tested in the study were written at a reading level beyond the comprehension of the average American.⁸²

This Article makes several major contributions to the existing empirical legal studies on the readability of consumer contracts. First, previous studies focused only on two consumer contract categories: software (Marotta-Wurgler and Taylor's study) or social networking (Rustad and Koenig's study).⁸³ This study, however, includes a highly heterogeneous sample. This Article's sample

⁷⁵ See Florencia Marotta-Wurgler & Robert Taylor, *Set in Stone? Change and Innovation in Consumer Standard-Form Contracts*, 88 N.Y.U. L. REV. 240, 243, 250–51 (2013) (examining in depth the EULA, an “important type of online standard-form contract”).

⁷⁶ See Florencia Marotta-Wurgler, *Even More Than You Wanted to Know About the Failures of Disclosure*, 11 JERUSALEM REV. LEGAL STUD. 63, 66–67 (2015) (demonstrating that nearly 200 out of 264 EULAs were either a browsewrap or clickwrap agreement). For the definition of browsewrap and clickwrap agreements, see *supra* Part I.B.

⁷⁷ Marotta-Wurgler & Taylor, *supra* note 75, at 253.

⁷⁸ See Rustad & Koenig, *supra* note 2, at 1437.

⁷⁹ See *id.* at 1512 (noting that 216 out of 329 contracts were either browsewraps or clickwraps).

⁸⁰ See *id.* at 1438 (noting that the article examines 329 terms of use).

⁸¹ *Id.* at 1435.

⁸² *Id.* at 1456 (“Our empirical study confirms that . . . social media providers are drafting onerous rights-foreclosure clauses at a reading level substantially beyond the comprehension of the average consumer.”). Another study, conducted by the Consumer Financial Protection Bureau, showed that arbitration clauses in a sample of consumer financial agreements are difficult to read. See CONSUMER FIN. PROT. BUREAU, ARBITRATION STUDY: REPORT TO CONGRESS, PURSUANT TO DODD–FRANK WALL STREET REFORM AND CONSUMER PROTECTION ACT § 1028(A) 27–29 (2015), http://files.consumerfinance.gov/f/201503_cfpb_arbitration-study-report-to-congress-2015.pdf [<https://perma.cc/FQB6-DCQD>] (asserting that arbitration clauses were generally “more complex” than the contract’s remaining clauses).

⁸³ See Marotta-Wurgler & Taylor, *supra* note 75, at 243 (studying the EULAs utilized by software firms); Rustad & Koenig, *supra* note 2, at 1437 (studying the terms of use of social networking firms).

covers, for example, categories ranging from merchandise to news and media, tourism to video games and file sharing, business services and social networking to software.⁸⁴ Second, previous studies examined clickwraps, a type of agreement that is rarely used nowadays by internet websites.⁸⁵ In contrast, this Article focuses on sign-in-wraps, which are widespread online.⁸⁶ Third, previous studies examined the readability of browserwraps, which courts often refuse to enforce against consumers.⁸⁷ Courts often view browserwraps with suspicion because consumers normally do not actively express assent to their terms.⁸⁸ This Article, however, focuses on sign-in-wrap agreements, which courts routinely enforce against consumers.⁸⁹

⁸⁴ See *infra* note 98 and accompanying text.

⁸⁵ See Marks, *supra* note 13, at 38 (noting that clickwrap agreements are seldom utilized).

⁸⁶ See *id.* at 37–38 (explaining that sign-in-wrap agreements have become ubiquitous); see also *Selden*, 2016 WL 6476934, at *4 (noting that numerous websites have begun to utilize sign-in-wrap contracts).

⁸⁷ See *Meyer v. Kalanick*, 200 F. Supp. 3d 408, 416 (S.D.N.Y. 2016), *vacated*, 868 F.3d 66 (2d Cir. 2017) (quoting *Schnabel v. Trilegiant Corp.*, 697 F.3d 110, 129 n.18 (2d Cir. 2012)) (“Courts will generally enforce browserwrap agreements only if they have ascertained that a user ‘had actual or constructive knowledge of the site’s terms and conditions, and . . . manifested assent to them.’ This is rarely the case for individual consumers.”); *Fteja*, 841 F. Supp. 2d at 836 (noting that prior courts have often enforced browserwrap agreements against businesses, but not individual consumers); Mark A. Lemley, *Terms of Use*, 91 MINN. L. REV. 459, 472 (2006) (surveying litigation involving browserwraps and concluding that courts enforced their terms only against corporations, not individual users).

⁸⁸ *Rodman v. Safeway Inc.*, No. 11-cv-03003-JST, 2015 WL 604985, *10 (N.D. Cal. Feb. 12, 2015) (stating that courts are “skeptical” of browserwrap agreements); see *Meyer*, 200 F. Supp. 3d at 416 (identifying the rare circumstances in which courts will enforce browserwrap contracts against individuals, namely those in which courts “have ascertained that a user had actual or constructive knowledge of the site’s terms and conditions, and manifested assent to them”).

⁸⁹ See *TopstepTrader, LLC*, 2018 WL 1859040, at *4 (“Courts applying Illinois law have upheld sign-in-wrap agreements, although they have not always characterized them as such.”); *Kai Peng v. Uber Techs., Inc.*, 237 F. Supp. 3d 36, 48 (E.D.N.Y. 2017) (“[C]ourts in this Circuit have upheld ‘Sign-In Wrap’ agreements where plaintiffs did not even click an ‘I Accept’ button, but instead clicked a ‘Sign Up’ or ‘Sign In’ button where nearby language informed them that clicking the buttons would constitute accepting the terms of service.”); *In re Facebook Biometric Info. Privacy Litig.*, 185 F. Supp. 3d at 1166 (explaining that the court’s circuit has permitted the practice of one-click to assent); *Berkson*, 97 F. Supp. 3d at 400–01 (noting that lower courts have upheld sign-in-wrap contracts in which “the hyperlinked ‘terms and conditions’ is next to the only button that will allow the user to continue use of the website”); Jill I. Gross, *The Uberization of Arbitration Clauses*, 9 ARB. L. REV. 43, 51 (2017) (noting that a majority of courts consider Uber’s terms and conditions to be a sign-in-wrap contract); see also *Saizhang Guan v. Uber Techs., Inc.*, 236 F. Supp. 3d 711, 723–24 (E.D.N.Y. 2017) (noting that the plaintiffs “explicit[ly]” agreed to the sign-in-wrap agreement by “twice click[ing]” buttons which read “YES, I AGREE”).

II. THE EMPIRICAL TEST

A. Data

This Article's sample contains the five hundred most popular websites in the United States that use sign-in-wrap agreements. The initial source of data was the Alexa Top Sites web service, which provides a ranked list of the most popular websites in the United States.⁹⁰ The Alexa Top Sites service is a leading website traffic measurement tool,⁹¹ based on millions of internet users.⁹² It is built on a significant sample of internet users⁹³ and is therefore widely used as a source of data for empirical research.⁹⁴

Out of the most popular websites in the United States, we identified the five hundred most popular sites—such as Google, Facebook, and Amazon—that use sign-in-wrap contracts. All of these five hundred websites rank among the one thousand most popular websites in the United States.⁹⁵ These websites served as the final sample for this Article.

According to the aggregated data that we collected from Alexa, the websites in this study's sample are indeed popular. On average, more than ten mil-

⁹⁰ See *Alexa Top Sites*, AMAZON WEB SERVICES, <https://aws.amazon.com/alexa-top-sites/> [<https://perma.cc/6D4U-5SXN>]. According to Alexa, the ranking of a website is determined by a combination of unique visitors and page views. See *id.*

⁹¹ Estela Marine-Roig, *A Webometric Analysis of Travel Blogs and Review Hosting: The Case of Catalonia*, 31 J. TRAVEL & TOURISM MARKETING 381, 386 (2014); Adela-Laura Popa et al., *The Online Strategy of Romanian Higher Education Institutions: Present and Future*, in 1 ENTREPRENEURSHIP, BUSINESS AND ECONOMICS 413, 420 (Mehmet Huseyin Bilgin & Hakan Danis eds., 2016) (noting that Alexa Traffic Rank is one of the most prominent and frequently used tools to assess a website's performance); Joel R. Reidenberg et al., *Disagreeable Privacy Policies: Mismatches Between Meaning and Users' Understanding*, 30 BERKELEY TECH. L.J. 39, 54 (2015) ("Alexa.com [is] the most prominent measurement company for web traffic data."); Arjun Thakur et al., *Quantitative Measurement and Comparison of Effects of Various Search Engine Optimization Parameters on Alexa Traffic Rank*, 26 INT'L J. COMPUTER APPLICATIONS 15, 16 (2011) (describing the significant popularity of Alexa Traffic Rank as a tool to measure website traffic); Liwen Vaughan & Rongbin Yang, *Web Traffic and Organization Performance Measures: Relationships and Data Sources Examined*, 7 J. INFORMETRICS 699, 705 (2013) (noting that Alexa is "the largest provider of publicly available Web traffic data").

⁹² Greg Orelind, *Top 6 Myths About the Alexa Traffic Rank*, ALEXA BLOG, <https://blog.alexa.com/top-6-myths-about-the-alexa-traffic-rank/> [<https://perma.cc/KS82-9GB5>].

⁹³ *Alexa Top Sites*, *supra* note 90 ("Alexa's site popularity traffic rankings are based on the anonymous usage patterns of one of the largest . . . samples of internet users available in the world.").

⁹⁴ Vaughan & Yang, *supra* note 91, at 705 (noting that data from Alexa Top Sites have been utilized in numerous studies). For examples of studies using Alexa, see Stephen K. Callaway, *Internet Banking and Performance*, 26 AM. J. BUS. 12, 16 (2011); Christine Ennew et al., *Competition in Internet Retail Markets: The Impact of Links on Web Site Traffic*, 38 LONG RANGE PLANNING 359, 362 (2005); Chun-Yao Huang & Shin-Shin Chang, *Commonality of Web Site Visiting Among Countries*, 60 J. AM. SOC'Y INFO. SCI. & TECH. 1168, 1172 (2009); Agnieszka Wolk & Sven Theysohn, *Factors Influencing Website Traffic in the Paid Content Market*, 23 J. MARKETING MGMT. 769, 779 (2007).

⁹⁵ To be precise, and as noted above, the five-hundredth website in our sample is ranked 988 in popularity according to Alexa.com.

lion U.S. unique visitors visited each website in the sample during the one-month period preceding this study’s data collection.⁹⁶ In addition, during that period, over two hundred million pageviews were counted, on average, for each website.⁹⁷ Table 1 below summarizes the main statistical data about the traffic of the websites in this Article’s sample.

Table 1. Website Characteristics (September 2018)

	Mean	Median	Standard Deviation
Unique Visitors	10,169,272	7,860,347	11,246,053
Pageviews	203,202,295	55,643,205	1,446,362,157

As noted, the categories of the websites in this Article’s sample are highly heterogeneous. They include search engines, social networks, general merchandise, news and media, video games, file sharing, email, software, financial management, sports, movies, directories, real estate, business services, programming, dictionaries, encyclopedias, music, telecom, employment, consumer electronics, tourism, web hosting, coupons, and home and garden.⁹⁸

B. Methodology

This study tested the readability of the sign-in-wrap agreement for each website in its sample.⁹⁹ This examination was conducted via two different readability tests that are often used together in empirical readability studies:¹⁰⁰

⁹⁶ We collected our data in September 2018. Alexa.com included concrete statistical data about the number of unique U.S. visitors and page views for 496 out of 500 websites in our sample. For the remaining four websites, there was no data.

⁹⁷ According to data collected in September 2018.

⁹⁸ The website categories were identified using the SimilarWeb search engine. See SIMILARWEB, <https://www.similarweb.com/> [<https://perma.cc/2T9H-J2FW>] (providing a means of analyzing internet traffic information).

⁹⁹ As noted below, 4.4% of the sign-in-wrap webpages included some kind of clarification alongside the agreement or some of its terms. 3.8% provided a summary of their contracts, which appeared just before—rather than alongside—the full contractual terms. In these cases, we tested the readability of the sign-in-wrap webpages including their embedded clarifications or summary. In addition, one exceptional website (typeform.com) had both a sign-in-wrap agreement and a totally separate webpage, defined as non-binding by the website, aimed at simplifying the agreement. In this unique case, we tested the readability of the legally binding agreement and not of the separate, allegedly non-binding, webpage.

¹⁰⁰ For studies that utilized these tests see, for example, Ian Gallacher, “When Numbers Get Serious”: A Study of Plain English Usage in Briefs Filed Before the New York Court of Appeals, 46 SUF-FOLK U. L. REV. 451, 462–63 (2013) (using the FRE and F-K tests to measure the readability of briefs filed in the New York Court of Appeals); Rachel Kahn et al., *Readability of Miranda Warnings and Waivers: Implications for Evaluating Miranda Comprehension*, 30 LAW & PSYCHOL. REV. 119, 131 (2006) (using these tests to evaluate *Miranda* warnings and waiver sheets); Lance N. Long & William

(1) the Flesch Reading Ease (FRE) test, and (2) the Flesch-Kincaid (F-K) test. The tests were executed using Microsoft Word,¹⁰¹ which has also been used in many other empirical readability studies.¹⁰²

The FRE test, developed by Rudolf Flesch,¹⁰³ is based on two factors: the average sentence length in a text and the average number of syllables per word in that text.¹⁰⁴ The test is based on the assumption that unreadable texts normally contain long sentences and words with many syllables.¹⁰⁵ Specifically, the formula that underlies the FRE test is: $206.835 - (1.015 * \text{average number}$

F. Christensen, *Does the Readability of Your Brief Affect Your Chance of Winning an Appeal?*, 12 J. APP. PRAC. & PROCESS 145, 147 (2011) (using these tests to analyze the readability of state, federal, and U.S. Supreme Court briefs); Richard Rogers et al., *An Analysis of Miranda Warnings and Waivers: Comprehension and Coverage*, 31 LAW & HUM. BEHAV. 177, 181, 185 (2007) (applying these tests to evaluate the readability of *Miranda* warnings); Rustad & Koenig, *supra* note 2, at 1460–61 (using the FRE and the F-K tests to evaluate the educational level needed to understand social media terms of use).

¹⁰¹ See, e.g., *ReadabilityStatistics Object (Word)*, MICROSOFT (June 7, 2019) [hereinafter *Microsoft Word Readability*], <https://docs.microsoft.com/en-us/office/vba/api/word.readabilitystatistics> [<https://perma.cc/EH4E-YSGW>] (highlighting the readability statistics that Microsoft Word is able to collect). Notably, Microsoft Word's readability test ignores phrases that end with a semicolon and are part of a vertical list of phrases. Ignoring these phrases seems reasonable, given their ambivalent readability consequences. Although phrases that end with a semicolon in vertical lists normally do not play a dominant role in sign-in-wrap contracts, the authors decided to conduct a stringent readability test on a sample of fifty contracts in order to verify that ignoring these semicolons does not have significant implications on readability results. In each of these contracts, the authors replaced the semicolons at the end of phrases in vertical lists, if any, with periods. The results of the test showed that this did not change readability levels in any significant way. (Average readability scores with semicolons: FRE = 35.428, F-K = 14.58, sentence length = 27.35. Average readability scores with periods replacing semicolons: FRE = 35.244, F-K = 14.578, sentence length = 27.152).

¹⁰² See, e.g., Elmer V. Bernstam et al., *Instruments to Assess the Quality of Health Information on the World Wide Web: What Can Our Patients Actually Use?*, 74 INT'L J. MED. INFORMATICS 13, 15 (2005); Anthony J. Domanico et al., *Overcoming Miranda: A Content Analysis of the Miranda Portion of Police Interrogations*, 49 IDAHO L. REV. 1, 12 (2012); Kahn et al., *supra* note 100, at 131; Christopher B. Seaman, *Willful Patent Infringement and Enhanced Damages After In re Seagate: An Empirical Study*, 97 IOWA L. REV. 417, 448 n. 186 (2012); Laurel LaMontagne, Note, *Children Under Pressure: The Problem of Juvenile False Confessions and Potential Solutions*, 41 W. ST. U. L. REV. 29, 53 n.234 (2013).

¹⁰³ Pranay Jindal & Joy C. MacDermid, *Assessing Reading Levels of Health Information: Uses and Limitations of Flesch Formula*, 30 EDUC. HEALTH 84, 85 (2017) (attributing the FRE to Rudolf Flesch); Rustad & Koenig, *supra* note 2, at 1459 n.150 (stating that Rudolf Flesch developed the FRE test).

¹⁰⁴ Thomas C. McKearney & Richard M. McKearney, *The Quality and Accuracy of Internet Information on the Subject of Ear Tubes*, 77 INT'L J. PEDIATRIC OTORHINOLARYNGOLOGY 894, 895 (2013) (explaining that the FRE test assesses “average sentence length and average number of syllables per word”).

¹⁰⁵ See Joseph R. Razeq & Randy E. Cone, *Readability of Business Communication Textbooks—An Empirical Study*, 18 INT'L J. BUS. COMM. 33, 34 (1981) (describing “complex writing styles” as those that utilize “long sentences with many multisyllable words”).

of words per sentence) – (84.6 * average number of syllables per word).¹⁰⁶ The score produced by the FRE formula ranges from zero to one hundred.¹⁰⁷ The lower the FRE score, the more unreadable the text.¹⁰⁸

According to readability literature, an FRE score lower than sixty means that the text is not understandable by consumers.¹⁰⁹ In line with this literature, some state statutes apply the FRE test to specific texts, such as tax forms.¹¹⁰ These statutes require that such texts meet a minimum score of sixty to satisfy statutory readability standards.¹¹¹ Similarly, a score of sixty or higher is often

¹⁰⁶ Arthur C. Graesser et al., *Coh-Metrix: Analysis of Text on Cohesion and Language*, 36 BEHAV. RES. METHODS, INSTRUMENTS, & COMPUTERS 193, 199 (2004); Nicola J. Kalk & David D. Pothier, *Patient Information on Schizophrenia on the Internet*, 32 PSYCHIATRIC BULL. 409, 409 (2008); Barbara B. Ott & Thomas L. Hardie, *Readability of Advance Directive Documents*, 29 J. NURSING SCHOLARSHIP 53, 55 (1997); Marli Terblanche & Lesley Burgess, *Examining the Readability of Patient-Informed Consent Forms*, 2 OPEN ACCESS J. CLINICAL TRIALS 157, 162 (2010).

¹⁰⁷ Donna M. D'Alessandro et al., *The Readability of Pediatric Patient Education Materials on the World Wide Web*, 155 ARCHIVES PEDIATRIC ADOLESCENT MED. 807, 808 (2001) (providing the FRE test's range of scores); Arthur J. Hanes, Jr. et al., *The "Plain English" Project of the Alabama Pattern Jury Instructions Committee—Civil*, 68 ALA. LAW. 369, 375 (2007); D. Kerr, *Information in Diabetes Care: Is There a Need to Dumb Down Even More?*, 24 DIABETIC MED. 561, 562 (2007); Brittain H. Tulbert et al., *Readability of Patient-Oriented Online Dermatology Resources*, 4 J. CLINICAL & AESTHETIC DERMATOLOGY 27, 27–28 (2011) (explaining that the FRE scores readability on a zero to one hundred scale).

¹⁰⁸ See Bernstam et al., *supra* note 102, at 16 (“The higher the ‘Flesch reading ease’ score, the easier a document is to read.”); Kerr, *supra* note 107, at 562 (noting that texts with higher FRE scores are more easily understood); Philip M. Linsley & Michael J. Lawrence, *Risk Reporting by the Largest UK Companies: Readability and Lack of Obfuscation*, 20 ACCT., AUDITING & ACCOUNTABILITY J. 620, 621 (2007) (noting that texts with higher FRE scores are more comprehensible); Marcello Moccia et al., *Can People with Multiple Sclerosis Actually Understand What They Read in the Internet Age?*, 25 J. CLINICAL NEUROSCIENCE 167, 167 (2016) (explaining that a lower FRE score indicates that the text is difficult to comprehend).

¹⁰⁹ Bernstam et al., *supra* note 102, at 14 (explaining that a score of sixty or above “is considered to be minimally acceptable for consumer-oriented information”); Rustad & Koenig, *supra* note 2, at 1472 (noting that “a score between sixty and sixty-nine is considered the acceptable standard for American consumers”); see also, e.g., Peter Breese et al., *The Health Insurance Portability and Accountability Act and the Informed Consent Process*, 141 ANNALS INTERNAL MED. 897, 897 (2004) (stating that the authors considered texts with a FRE score below sixty as containing “inappropriately complex language”); Kalk & Pothier, *supra* note 106, at 410 (stating that an FRE score of sixty is “the lower limit for ‘plain English’”); Harold A. Lloyd, *Plain Language Statutes: Plain Good Sense or Plain Nonsense?*, 78 LAW LIBR. J. 683, 689 (1986) (asserting that “Plain English” is defined as a text with a score of sixty or better); Norman E. Plate, *Do as I Say, Not as I Do: A Report Card on Plain Language in the United States Supreme Court*, 13 T.M. COOLEY J. PRAC. & CLINICAL L. 80, 93 (2010) (explaining that a minimum FRE score of sixty is required “to reach a plain-language standard”).

¹¹⁰ See, e.g., OR. REV. STAT. § 316.364(1) (2017) (applying the FRE test to state income tax return instructions).

¹¹¹ See, e.g., *id.* (requiring that “[t]he instructions to an individual state income tax return form” have an FRE score of at least sixty); see also, e.g., Rustad & Koenig, *supra* note 2, at 1458 (“States incorporating the Flesch test will frequently require statutory provisions to meet a score of sixty or greater to satisfy minimum readability standards.”).

used by U.S. government agencies to ensure that documents are readable.¹¹² Along these lines, if sign-in-wrap agreements receive an average FRE score lower than sixty, they should be considered unreadable by typical consumers.

The second readability test this study applied is the F-K test, developed by Rudolf Flesch and John P. Kincaid.¹¹³ Much like the FRE test, the F-K test is based on the average number of words per sentence and the average number of syllables per word.¹¹⁴ The coefficients of the F-K formula, among other things, however, differ from those of the FRE formula. Specifically, the F-K formula is: $(0.39 * \text{average number of words per sentence}) + (11.8 * \text{average number of syllables per word}) - 15.59$.¹¹⁵

This formula, developed by testing a large number of readers,¹¹⁶ produces a score that estimates the grade level required to understand the text.¹¹⁷ For example, an F-K score of seven indicates that only those with a seventh-grade education and above will be able to easily understand the text.¹¹⁸ A result greater than twelve signifies that additional years of education beyond that of a

¹¹² McKearney & McKearney, *supra* note 104, at 897 (stating that U.S. government entities utilize FRE scores between sixty and seventy to determine that texts are sufficiently readable); Vishal Narwani et al., *Readability and Quality Assessment of Internet-Based Patient Education Materials Related to Laryngeal Cancer*, 38 HEAD & NECK 601, 603 (2016).

¹¹³ See Thomas H. Koenig & Michael L. Rustad, *Digital Scarlet Letters: Social Media Stigmatization of the Poor and What Can Be Done*, 93 NEB. L. REV. 592, 616 n.131 (2015) (citing Rudolf Flesch and John P. Kincaid as the co-authors of the F-K test); Adriene Lim, *The Readability of Information Literacy Content on Academic Library Web Sites*, 36 J. ACAD. LIBRARIANSHIP 296, 297 (2010) (attributing the F-K test to Rudolf Flesch and John P. Kincaid).

¹¹⁴ See Nancy Cotugna et al., *Evaluation of Literacy Level of Patient Education Pages in Health-Related Journals*, 30 J. COMMUNITY HEALTH 213, 215 (2005) (explaining that the F-K test measures the readability of a text “based on the average number of syllables per word and the average number of words per sentence”); Ott & Hardie, *supra* note 106, at 54 (“The Flesch-Kincaid formula evaluates readability as the average number of words per sentence and the average number of syllables per word.”); Plate, *supra* note 109, at 93 (discussing the FRE test’s components); Rogers et al., *supra* note 100, at 181 (“The Flesch-Kincaid estimates the needed grade level for comprehension via a formula that combines sentence length with the average number of syllables per word.”).

¹¹⁵ K.K. DuVivier, *Grammar and Style Check Programs: Machine v. Man*, 25 COLO. LAW. 27, 27 (1996); Graesser et al., *supra* note 106, at 199; Plate, *supra* note 109, at 93; Terblanche & Burgess, *supra* note 106, at 162.

¹¹⁶ See Glenda M. McClure, *Readability Formulas: Useful or Useless?*, PC-30 IEEE TRANSACTIONS PROF. COMM. 12, 12 (1987) (noting that the F-K formula was “derived . . . by testing a large sample of Navy technical personnel on their understanding of Navy technical passages”).

¹¹⁷ Gallacher, *supra* note 100, at 458 (“The Flesch-Kincaid test is a reformulation of the Flesch Reading Ease Score test that expresses its result in terms of the grade level a hypothetical reader should have achieved before the selected passage would be readable.”); Plate, *supra* note 109, at 93 (explaining that the F-K test approximates the grade level required in order to understand a written text); Rogers et al., *supra* note 100, at 181.

¹¹⁸ See Cotugna et al., *supra* note 114, at 215 (noting that “a Flesch-Kincaid reading level of 10 indicates that a 10th grader will be able to read and understand that particular text”).

typical U.S. high school are needed to comprehend the text.¹¹⁹ Accordingly, the higher the number, the harder it is to understand the text.¹²⁰ In readability literature, the maximum recommended F-K score for consumer-oriented texts is 8.0.¹²¹ This recommendation seems to reflect, among other things, that most U.S. adults read at an eighth-grade level.¹²²

In keeping with this recommendation, many state insurance regulators require insurance contracts to be written at or below an eighth-grade reading level.¹²³ Likewise, the U.S. Department of Education recommends that health-related information be written at or below an eighth-grade reading level.¹²⁴ In the same vein, the Food and Drug Administration and the National Institutes of Health recommend designing consent forms at or below an eighth-grade reading level.¹²⁵ Similarly, the U.S. National Cancer Institute (NCI) recommends

¹¹⁹ Terblanche & Burgess, *supra* note 106, at 158 (stating that the F-K formula “indicates the number of years of education generally required to understand the text, relevant when the formula results in a number greater than 12”).

¹²⁰ Graesser et al., *supra* note 106, at 199.

¹²¹ Bernstam et al., *supra* note 102, at 16 (“The maximum recommended ‘Flesch-Kincaid reading level’ for consumer-oriented materials is 8th grade.”); D’Alessandro et al., *supra* note 107, at 807 (“Materials should be written at the 8th-grade level or lower.”); Cynthia R. Farina et al., *Rulemaking* 2.0, 65 U. MIAMI L. REV. 395, 438 (2011) (“[T]he recommended readability level for . . . text written for broad public consumption is no higher than 8.0 on the Flesch-Kincaid scale . . .”).

¹²² See Elena T. Carbone & Jamie M. Zoellner, *Nutrition and Health Literacy: A Systematic Review to Inform Nutrition Research and Practice*, 112 J. ACAD. NUTRITION & DIETETICS 254, 254 (2012) (“Most adults read at an eighth-grade level.”); Marie F. Kuczmarski et al., *Health Literacy and Education Predict Nutrient Quality of Diet of Socioeconomically Diverse, Urban Adults*, 2 J. EPIDEMIOLOGY PREVENTIVE MED. 1, 6 (2016) (referencing a National Assessment of Adult Literacy finding that “most adults read at an 8th grade level”); Kendall McCarty & Jayne Rogers, *Inpatient Asthma Education Program*, 38 PEDIATRIC NURSING 257, 259 (2012) (pointing to a finding that most adults have an eighth-grade reading level); Meghan M. Yi et al., *Readability of Patient Education Materials from the Web Sites of Orthopedic Implant Manufacturers*, 32 J. ARTHROPLASTY 3568, 3570 (2017) (noting the average reading level of adults).

¹²³ Richard J. Wirth, *What’s Puzzling You . . . Is the Nature of Variable Annuity Prospectuses*, 34 W. NEW ENG. L. REV. 127, 130 (2012) (“Most state insurance regulators require that insurance contracts be written at or below an eighth grade reading level . . .”); see, e.g., 27 R.I. GEN. LAWS § 27-74-11(c)(1) (Supp. 2018) (requiring “discount medical plan organization[s]” to provide certain disclosures at no higher than an eighth-grade reading level); S.C. CODE ANN. § 34-29-165 (Supp. 2018) (applying the F-K test to insurance forms); S.C. CODE ANN. § 34-29-166 (Supp. 2018) (employing the F-K test in the context of insurance-related texts); S.C. CODE ANN. § 37-3-202 (2015 & Supp. 2018) (mandating that specified insurance texts be written at no higher than a seventh-grade reading level); S.C. CODE ANN. § 37-4-105 (2015) (providing that certain insurance disclosures must “achieve[] a grade level score of no higher than seventh grade on the Flesch-Kincaid readability test”); S.C. CODE ANN. § 37-4-201 (2015) (mandating that certain disclosures be written at a seventh-grade level).

¹²⁴ John O. Elliott & Bassel F. Shneker, *A Health Literacy Assessment of the Epilepsy.com Website*, 18 SEIZURE 434, 434 (2009) (noting that the U.S. Department of Education recommended an eighth-grade reading level for “health related” written materials).

¹²⁵ Andrew Schumacher et al., *Informed Consent in Oncology Clinical Trials: A Brown University Oncology Research Group Prospective Cross-Sectional Pilot Study*, 12 PLOS ONE 1, 8 (2017) (explaining that the Food and Drug Administration advises material to be written at no higher than an

that informed consent forms used in NCI-sponsored trials be written at no higher than an eighth-grade reading level.¹²⁶ Given these recommendations, if the sign-in-wrap agreements in this Article's sample receive an average F-K score higher than 8.0, they should be considered unreadable by casual consumers.

As noted, the FRE and F-K tests are considered to be reliable measures for detecting text readability.¹²⁷ Both tests are used by many federal and state agencies.¹²⁸ The FRE test has also been used in several U.S. state statutes aiming to ensure the readability of specific documents, such as instructions on income tax returns,¹²⁹ financial institution forms,¹³⁰ and insurance forms.¹³¹ In addition, the F-K test is used as a standard readability test by the U.S. Department of Defense.¹³² Several states have also utilized the F-K test in statutes aiming to ensure the readability of specific documents concerning, for example, production contracts,¹³³ credit life insurance,¹³⁴ and health benefit plans.¹³⁵

eighth-grade reading level); Kris A. Walters & Michael R. Hamrell, *Consent Forms, Lower Reading Levels, and Using Flesch-Kincaid Readability Software*, 42 DRUG INFO. J. 385, 386 (2008) (noting that "the FDA . . . and National Institutes of Health . . . often advise developing consent forms between a 6th and 8th grade reading level").

¹²⁶ Nancy E. Kass et al., *Length and Complexity of US and International HIV Consent Forms from Federal HIV Network Trials*, 26 J. GEN. INTERNAL MED. 1324, 1324 (2011) ("[T]he US National Cancer Institute (NCI) recommended that informed consent forms for NCI-sponsored trials be written at no more than the 8th grade reading level . . .").

¹²⁷ Roger E. Alexander, *Readability of Published Dental Educational Materials*, 131 J. AM. DENT. ASSOC. 937, 938 (2000) (describing the F-K test as a "reliable" measure); Razek & Cone, *supra* note 105, at 34; Rogers et al., *supra* note 100, at 181 (noting that the FRE test is "highly reliable").

¹²⁸ Hanes et al., *supra* note 107, at 375 (noting that state and federal government agencies frequently require written texts to meet a certain scoring standard based on the FRE and F-K tests).

¹²⁹ See, e.g., OR. REV. STAT. § 316.364(1) (applying the FRE test to state income tax return documentation).

¹³⁰ See, e.g., CAL. FIN. CODE § 4053(d)(1)(J) (West 2015) (requiring select forms provided by financial institutions to attain an FRE score of at least fifty).

¹³¹ ARK. CODE ANN. § 23-80-206(a)(1) (2014) (applying the FRE formula to certain insurance documentation); COLO. REV. STAT. § 10-4-633.5(1)(a) (2016); D.C. CODE § 31-4725(a)(1) (2013); GA. CODE ANN. § 33-3-25(b) (2014 & Supp. 2019); HAW. REV. STAT. §§ 431:10-104(1), -105(a) (2018); MONT. CODE ANN. § 33-15-325(1)(a) (2017); N.J. STAT. ANN. § 17B:17-21(a)(1) (West 2006); N.D. CENT. CODE §§ 26.1-33-30(1)(a), -36-14(1)(a) (2017); OKLA. STAT. tit. 36, § 3645(A)(1) (2011); S.D. CODIFIED LAWS § 58-11A-3(1) (2004); TENN. CODE ANN. § 56-7-1605(a)(1) (2016); W. VA. CODE § 33-29-5(a)(1) (2019).

¹³² Paul Harris, *The Readability of Sample Stories for Eye Movement Recording*, 22 J. BEHAV. OPTOMETRY 88, 89 (2011); Sven Meyer zu Eissen et al., *Plagiarism Detection Without Reference Collections*, in ADVANCES IN DATA ANALYSIS 359, 361 (Reinhold Decker & Hans-Joachim Lenz eds., 2007).

¹³³ See, e.g., 505 ILL. COMP. STAT. 17/20(a)(4) (2018) (requiring production contracts to be written at or below a twelfth-grade reading level under the F-K test).

¹³⁴ See, e.g., S.C. CODE ANN. § 34-29-166; see also *id.* § 37-4-105(B) (mandating that certain insurance forms be written at a seventh-grade reading level, as determined by the F-K formula); *id.*

Furthermore, the FRE and F-K tests are often used together in legal empirical studies on text readability.¹³⁶ They are also frequently used in non-legal empirical studies.¹³⁷ Importantly, they are highly correlated with other readability test formulas.¹³⁸

C. Results

This Section presents the fundamental empirical results using FRE and F-K scores.¹³⁹ It then examines the statistical relationships between four website variables: (a) the number of unique U.S. visitors; (b) the number of page views; (c) the FRE score; and (d) the F-K score.

1. Readability of Sign-in-Wrap Contracts

The results of this study indicate that consumer sign-in-wrap contracts are generally unreadable. As explained, the recommended FRE score for consumer-related information should be sixty or higher.¹⁴⁰ The median FRE score in this study's sample, however, is 34.20, and the mean FRE score is 34.86. To

§ 37-4-201(2) (requiring certain insurance-related medical disclosures to have an F-K score no higher than seven).

¹³⁵ See COLO. REV. STAT. 10-16-107.3(1)(a) (2016) (applying the F-K and FRE tests to health insurance texts).

¹³⁶ See Gallacher, *supra* note 100, at 462–63 (using these tests to measure the readability of briefs filed in the New York Court of Appeals); Kahn et al., *supra* note 100, at 131 (using these tests to evaluate *Miranda* warnings and waiver sheets); Long & Christensen, *supra* note 100, at 147 (using these tests to analyze the readability of state, federal, and U.S. Supreme Court briefs); Plate, *supra* note 109, at 82, 93 (using the FRE formula to test the readability of U.S. Supreme Court majority opinions); Rogers et al., *supra* note 100, at 181, 185 (applying these tests to evaluate the readability of *Miranda* warnings); Rustad & Koenig, *supra* note 2, at 1460–61 (utilizing these tests to assess the readability of social media terms of use).

¹³⁷ See, e.g., Bernstam et al., *supra* note 102, at 14–15 (utilizing the FRE and FK tests to assess the readability of “quality rating instruments intended to be used by healthcare consumers to evaluate websites that display health information”); D’Alessandro et al., *supra* note 107, at 808 (applying the FRE and FK tests to evaluate the readability of pediatric patient educational documentation); L.M. Greene et al., *Severity of Nasal Inflammatory Disease Questionnaire for Canine Idiopathic Rhinitis Control: Instrument Development and Initial Validity Evidence*, 31 J. VETERINARY INTERNAL MED. 134, 135 (2017) (evaluating a questionnaire intended for owners of dogs with chronic rhinitis using the FRE and F-K tests); Kalk & Pothier, *supra* note 106, at 409 (“Readability of health-related information in other disciplines has been assessed using the Flesch-Kincaid Grade Level and Flesch Reading Ease . . . score”); Kerr, *supra* note 107, at 561 (applying the FRE and F-K tests to literature provided to patients with diabetes).

¹³⁸ See José L. Calderón et al., *FONBAYS: A Simple Method for Enhancing Readability of Patient Information*, 13 ANNALS BEHAV. SCI. & MED. EDUC. 20, 21 (2007) (“The F-K and [FRE] formulas have been shown to be highly correlated with other commonly used readability assessment methods.”).

¹³⁹ See *infra* notes 140–154 and accompanying text.

¹⁴⁰ See *supra* note 109 and accompanying text.

put these FRE scores in context, they are comparable to the score of articles found in academic journals, which typically do not target the general public.¹⁴¹ Furthermore, almost all of the sign-in-wrap agreements in this study's sample (498 out of 500, or 99.6%), received an FRE score that is lower than the recommended score of sixty.

The frequency distribution histogram of the FRE scores is represented in Figure 1.¹⁴²

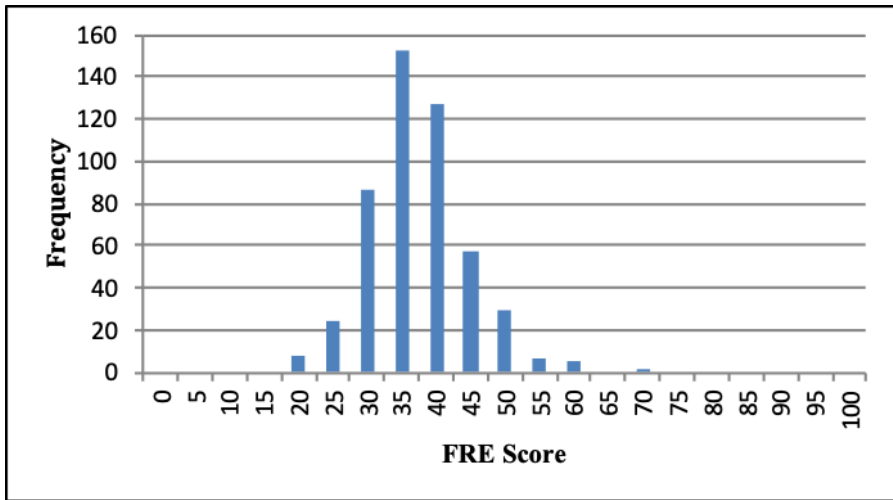


Figure 1. Frequency distribution histogram for FRE scores

Similarly, whereas the recommended F-K score for consumer-oriented materials is 8.0, the median F-K score in this study's sample is 14.9, and the mean F-K score is 14.67. Moreover, almost all of the contracts (498 out of 500, or 99.6%), received an F-K score that is higher than the recommended score of

¹⁴¹ See HEALTH & SAFETY LABORATORY, EVALUATION OF PRODUCT DOCUMENTATION PROVIDED BY SUPPLIERS OF HAND HELD POWER TOOLS 14 (2009), <http://www.hse.gov.uk/research/rrpdf/rr714.pdf> [<https://perma.cc/ZVJ2-EB25>] (applying FRE tests to a variety of example texts, including scientific and academic journals); Laurence Coey, *Readability of Printed Educational Materials Used to Inform Potential and Actual Ostomates*, 5 J. CLINICAL NURSING 359, 361 (1996) (same); Sheila Payne et al., *Written Information Given to Patients and Families by Palliative Care Units: A National Survey*, 355 LANCET 1792, 1792 (2000) (noting that the FRE scores of academic journals range from thirty-one to fifty); Alastair Scotland, *Towards Readability and Style*, 7 COMMUNITY MED. 126, 127 (1985) (specifying the standard FRE scores of academic journals).

¹⁴² Because some platforms do not reproduce images, we have archived all graphics herein at <https://www.bc.edu/content/dam/bc1/schools/law/pdf/law-review-content/BCLR/60-8/benoliel-graphics.pdf> [<https://perma.cc/Y5R4-Z4L5>]. For the vigilant reader who is not accustomed to reading histograms, it is important to clarify that, in Figure 1, the bar under the value “45” represents scores ranging from forty to forty-five, the bar under the value “50” represents scores ranging from forty-five to fifty, and so on.

8.0. As in the case of the FRE test, under the F-K test 99.6% of the contracts are unlikely to be understood by consumers.

Figure 2 represents the frequency distribution histogram for the F-K scores.

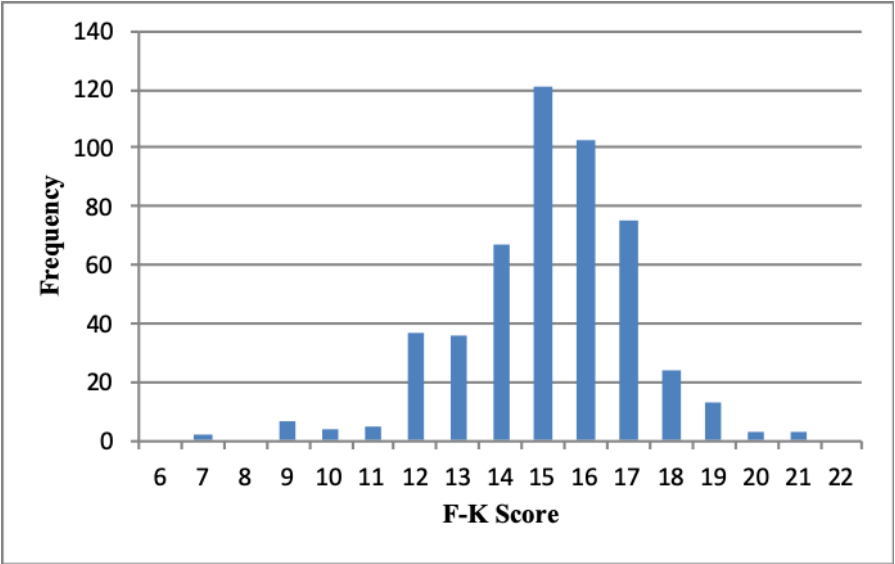


Figure 2. Frequency distribution histogram for F-K scores

Furthermore, according to readability literature, the average sentence length of a text should be no more than twenty-five words;¹⁴³ otherwise, the text is likely to be hard to read.¹⁴⁴ Yet in 70.4% of the sign-in-wrap agreements in this study’s sample, the average (!) sentence length is longer than twenty-five words.¹⁴⁵ This result also indicates that sign-in-wrap agreements are typi-

¹⁴³ See, e.g., BRYAN A. GARNER, *LEGAL WRITING IN PLAIN ENGLISH* 27 (2d ed. 2013) (recommending that sentences be kept “to about 20 words” in length); RICHARD C. WYDICK, *PLAIN ENGLISH FOR LAWYERS* 36 (5th ed. 2005) (“Keep the *average* sentence length below 25 words.”); Gallacher, *supra* note 100, at 477–78 (noting the Plain English recommendation for the maximum number of words that a sentence should contain ranges from twenty to twenty-five); Joseph Kimble, *The Elements of Plain Language*, 81 MICH. B.J. 44, 44 (2002) (noting that “short and medium-length sentences” are preferable and that, on average, sentences should be kept to twenty words); see also Wayne Schiess, *The Art of Consumer Drafting*, 11 SCRIBES J. LEGAL WRITING 1, 4–5 (2007) (citing twenty-five words per sentence as the recommended maximum).

¹⁴⁴ BRYCE T. MCINTYRE, *ENGLISH NEWS WRITING* 19 (1996); Nirmaldasan, *Longer the Sentence, Greater the Strain*, READABILITY MONITOR (Apr. 30, 2012), <https://strainindex.wordpress.com/2012/04/30/longer-the-sentence-greater-the-strain/> [<https://perma.cc/2DUB-3DUS>]; Sara Vincent, *Sentence Length: Why 25 Words Is Our Limit*, INSIDE GOV.UK (Aug. 4, 2014), <https://insidegovuk.blog.gov.uk/2014/08/04/sentence-length-why-25-words-is-our-limit/> [<https://perma.cc/5A38-URW7>].

¹⁴⁵ The average sentence length of each sign-in-wrap was obtained via Microsoft Word. See *Microsoft Word Readability*, *supra* note 101.

cally unreadable. Figure 3 represents the frequency distribution histogram for the average sentence length.

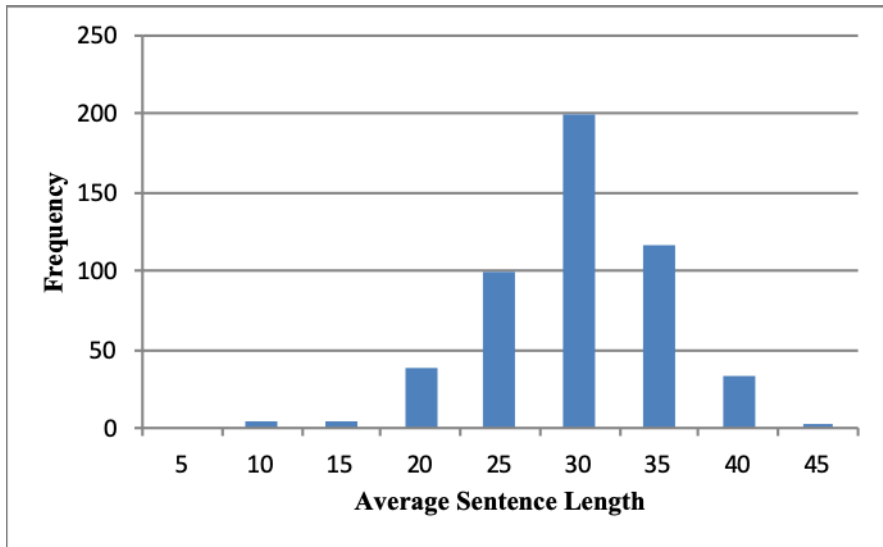


Figure 3. Frequency distribution histogram for average sentence length

Anecdotally, several sign-in-wrap agreements contained extremely long sentences comprising many more than twenty-five words.¹⁴⁶ For example, one of the sign-in-wrap contracts contains the following 161-word sentence, which is difficult to read.¹⁴⁷ Try out the challenge of reading it aloud without running out of breath.

To the greatest extent permitted by law, under no circumstances will Grinding Gear Games, its employees, contractors or agents be liable to you in contract, tort, equity, statute, regulation or otherwise for any loss, damage, costs, legal costs, professional and other expenses of any nature whatsoever incurred or suffered by you or by any third-party, whether direct or consequential (including without limitation any economic loss or other loss of turnover, profits, business or goodwill) arising out of any dispute or contractual, tortious or other claims or proceedings made by or bought [sic] against you which relate in any way to your access and use of any of the Website, Materials and Services, including without limitation in relation

¹⁴⁶ See, e.g., *Path of Exile Terms of Use*, GRINDING GEAR GAMES, <https://www.pathofexile.com/account/create> [<https://perma.cc/8DRW-B475>] (containing sentences that are greater than twenty-five words in length).

¹⁴⁷ See *id.* (containing the sign-in-wrap contract required to utilize the Path of Exile website).

to any Posts or Images or any breach by you of the Posting Policy or Image Policy, or in respect of any failure or omission on the part of Grinding Gear Games to comply with its obligations as set out in these Terms of Use.¹⁴⁸

Did you do it? Perhaps most readers did not even bother trying. Presumably, the very few who tried abandoned the task without completing it and quickly moved on. This is exactly how consumers are likely to respond to such a dense text.

2. Statistical Relationships

This study used the Spearman's rank correlation coefficient to quantify the statistical relationships between a website's U.S. unique visitors count, number of page views, FRE score, and F-K score. This coefficient is a nonparametric measure that assesses the relationship between the rankings of two variables rather than between their actual values.¹⁴⁹ It is therefore robust to outliers,¹⁵⁰ which were identified in this study's data.

Specifically, yet unsurprisingly, the website Google.com is an outlier for two reasons. First, it had a substantially higher rate of page views than all other websites. Notably, while it boasted approximately thirty-one billion page views, the second largest observation in this study's sample, Reddit.com, had about five billion page views (a ratio of about 6:1). Second, Google.com had the highest number of unique visitors, about 171 million, significantly higher than all other websites, including the second largest observation, Facebook.com, which had eighty-nine million unique visitors.

The results of the bivariate analysis are troubling from a consumer policy perspective. First, the results show that the relationships between the number of unique visitors and the FRE and F-K scores are weak and do not attain statistical significance.¹⁵¹ These results might imply that the poor readability scores found in this sample are not limited to popular websites with many unique visitors. Hence, they might also be found in many other, less crowded sites not examined in this study. Even worse, the associations between the number of page views and the FRE and F-K scores were weak and statistically

¹⁴⁸ *Id.*

¹⁴⁹ See Marine-Roig, *supra* note 91, at 391 (noting that Spearman's rank correlation coefficient "measures the strength and direction of the association between two ordinal level variables").

¹⁵⁰ See, e.g., M.M. Mukaka, *Statistics Corner: A guide to Appropriate Use of Correlation Coefficient in Medical Research*, 24 MALAWI MED. J. 69, 69 (2012) (stating that Spearman's rank correlation coefficient is "appropriate when one or both variables are skewed or ordinal and is robust when extreme values are present").

¹⁵¹ $r = 0.06$, $p = 0.15$ and $r = -0.05$, $p = 0.32$ for FRE and F-K, respectively.

significant, meaning that they could not be attributed merely to chance.¹⁵² These results might imply that websites with fewer page views than the popular sites tested in this study are likely, to some degree, to have even poorer readability scores.¹⁵³

Unsurprisingly, the correlation between the FRE and F-K scores was strong and negative.¹⁵⁴ This correlation implies that the two scores quantify readability in a comparable way. Figure 4 is a scatterplot for the FRE and F-K scores that illustrates the linear negative relationship between these two variables.

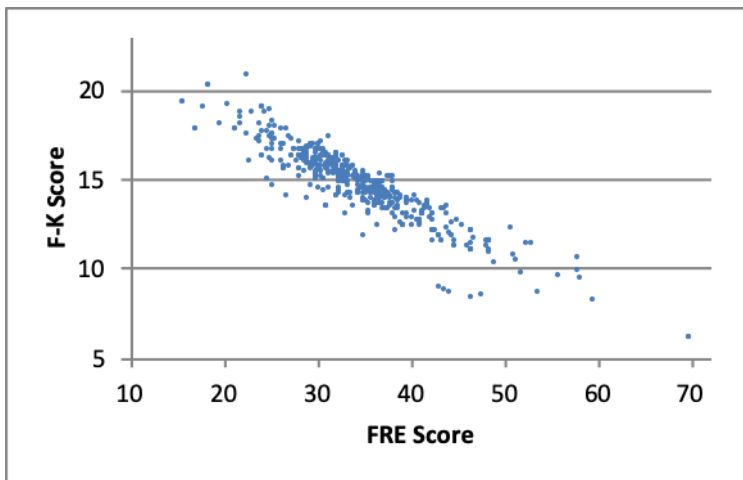


Figure 4. Scatterplot for FRE and F-K scores

III. DISCUSSION AND NORMATIVE IMPLICATIONS

Under the duty to read doctrine, consumers are legally expected to read consumer contracts before agreeing to their terms.¹⁵⁵ This study empirically demonstrates, however, that these contracts are often unreadable. Specifically, this study indicates that the sign-in-wrap contracts of highly popular websites in the United States are mostly written in an unreadable manner.¹⁵⁶

Unreadable sign-in-wrap contracts entail higher transaction costs for those consumers who wish to become familiar with the terms of their contracts. Unreadable contracts also mean that fewer consumers are able to make

¹⁵² $r = 0.15$, $p < 0.001$ and $r = -0.12$, $p = 0.01$ for FRE and F-K, respectively.

¹⁵³ Notably, the results of our analysis also show a moderate correlation between the number of unique visitors and page views ($r = 0.58$, $p < 0.001$).

¹⁵⁴ $r = -0.92$, $p < 0.001$.

¹⁵⁵ See *supra* Part I.A.

¹⁵⁶ See *supra* Part II.C.1.

informed decisions based on their contracts. Although this is true with respect to all consumers, it is especially acute in the case of some vulnerable groups of consumers, such as immigrants, the poor, and the less-educated.¹⁵⁷

Overall, unreadable contracts increase the risk of a fundamental market failure in the form of information asymmetry.¹⁵⁸ Such contracts also reduce consumers' ability to engage in comparison shopping,¹⁵⁹ which in turn reduces firms' incentive to draft efficient contracts. Similarly, unreadable contracts increase the reading costs of third parties—such as pro-consumer organizations and online review websites and platforms—that may be willing to compare, study, and rank consumer contracts.¹⁶⁰ All of this weakens competition over contractual terms, which makes the market more likely to offer low-quality contracts.¹⁶¹

The results of this study, which indicate that consumer sign-in-wrap contracts are difficult to read, are relevant to the general pool of consumers. Nearly ninety percent of U.S. adult consumers use the internet at least occasionally.¹⁶² Eighty-five percent of Americans get online news from their desktop computers.¹⁶³ Approximately eighty percent are online shoppers.¹⁶⁴ Over sev-

¹⁵⁷ See Kuczmarski et al., *supra* note 122, at 1 (noting that individuals living below the poverty line have lower “health literacy” than those above the poverty line).

¹⁵⁸ See, e.g., Becher, *supra* note 2, at 734 (“The existence of obligational asymmetric information is a serious market failure that can undermine the efficiency of many consumer transactions. Contracts will systematically increase welfare if, and only if, contracting parties have the information necessary for an informed evaluation of all transactional aspects (including, of course, contract terms).”).

¹⁵⁹ See, e.g., Marotta-Wurgler & Taylor, *supra* note 75, at 275 (“The implication of this trend [of drafting hard-to-read contracts] is that, to the extent consumers read terms to comparison shop, the cost of becoming informed about terms has increased.”); see also Becher, *supra* note 2, at 742 (“Another premise that the market analysis relies on is that, in a competitive market, consumers can choose among different [standard form contracts] and thus avoid unfair provisions.”).

¹⁶⁰ See, e.g., Marotta-Wurgler & Taylor, *supra* note 75, at 275 (noting that difficult-to-read contracts also increase transaction costs for intermediaries); cf. Becher & Unger-Aviram, *supra* note 4, at 223–24 (noting that review by intermediaries is one way to “mitigate” the problem of lengthy and unreadable contracts).

¹⁶¹ See, e.g., Becher, *supra* note 2, at 743 (noting that information asymmetry in consumer contracts arguably incentivizes providers “to compete over several salient transactional terms while racing to the bottom on others” and that the “race to the bottom allows firms to offset for the costs of competing over the salient terms, most prominently the price”); Korobkin, *supra* note 23, at 1270 (explaining that when contractual terms become non-salient, it incentivizes providers to offer low-quality terms, regardless of the efficiency of those terms).

¹⁶² J. Clement, *Share of Adults in the United States Who Use the Internet from 2000 to 2019*, STATISTA (June 18, 2019), <https://www.statista.com/statistics/185700/percentage-of-adult-internet-users-in-the-united-states-since-2000/> [<https://perma.cc/TJ7D-UNLR>] (demonstrating that in 2018, 89% of adults in the United States used the internet “at least occasionally”); *Internet/Broadband Fact Sheet*, PEW RES. CTR. (June 12, 2019), <http://www.pewinternet.org/fact-sheet/internet-broadband/> [<https://perma.cc/SVZ8-TQNB>] (noting that “nine-in-ten American adults use the internet”).

¹⁶³ Michael Barthel & Amy Mitchell, *Americans’ Attitudes About the News Media Deeply Divided Along Partisan Lines*, PEW RES. CTR. 16 (May 10, 2017), <https://www.journalism.org/wp-content/>

enty percent of Americans have utilized some form of shared or on-demand online service.¹⁶⁵ The majority of U.S. adults also use two or more social media platforms.¹⁶⁶ These statistics demonstrate that the vast majority of Americans face unreadable contracts on a regular basis.

A. Policy Recommendations

In view of the alarming results of this study, policymakers should consider imposing a general readability duty on consumer contract drafters. Under the suggested readability duty, drafters will be required to provide contracts that consumers can easily understand. Some states have already taken this path, at least with respect to some types of contracts.¹⁶⁷ Such a duty, however, should be a general one and accompanied by clear criteria.

To make this proposal practical and easy to enforce (and to comply with), consumer contracts should be aligned with the FRE and F-K standards. These standards are easy to employ and verify,¹⁶⁸ and they are commonly recommended for consumer-oriented materials.¹⁶⁹ According to the suggested readability duty, if a consumer contract that targets the general pool of consumers receives an FRE score under sixty or an F-K score above 8.0, the drafter would be considered in breach of this duty.¹⁷⁰ In such cases, consumers should be relieved from the duty to read.¹⁷¹ To further incentivize firms, courts can sub-

uploads/sites/8/2017/05/PJ_2017.05.10_Media-Attitudes_FINAL.pdf [https://perma.cc/6K4A-KVAC] (noting that 85% of Americans get news via “a desktop computer”).

¹⁶⁴ Aaron Smith & Monica Anderson, *Online Shopping and E-Commerce*, PEW RES. CTR. 2 (Dec. 19 2016), http://assets.pewresearch.org/wp-content/uploads/sites/14/2016/12/16113209/PI_2016.12.19_Online-Shopping_FINAL.pdf [https://perma.cc/LNR2-YH7A] (“[R]oughly eight-in-ten Americans are now online shoppers . . .”).

¹⁶⁵ Aaron Smith, *Shared, Collaborative and On Demand: The New Digital Economy*, PEW RES. CTR. (May 19, 2016), https://www.pewinternet.org/wp-content/uploads/sites/9/2016/05/PI_2016.05.19_Sharing-Economy_FINAL.pdf [https://perma.cc/U84Z-UREK] (noting that “72% of Americans have used some type of shared or on-demand online service”).

¹⁶⁶ Kevin Murnane, *Which Social Media Platform Is the Most Popular in the US?*, FORBES (Mar. 3, 2018), <https://www.forbes.com/sites/kevinmurnane/2018/03/03/which-social-media-platform-is-the-most-popular-in-the-us/#51939b681e4e> [https://perma.cc/768W-J7WM] (noting that a majority of adults in the United States “use more than one social media platform”).

¹⁶⁷ See *supra* notes 9, 123, and 129–131 and accompanying text.

¹⁶⁸ As noted, the two tests are rather accessible: they are available, for instance, via Microsoft Word. See *supra* note 101 and accompanying text.

¹⁶⁹ See *supra* note 121 and accompanying text.

¹⁷⁰ See *supra* note 109 and accompanying text (explaining that consumer texts with FRE scores below sixty are unreadable). At the same time, contracts that target specific groups of consumers—such as immigrants or the elderly—may require different readability scores.

¹⁷¹ It may well be that not all consumer contracts are the same, and that some might merit a more challenging text. In such cases, courts can determine the exact readability threshold after carefully reviewing the contract and consulting with experts or consumer organizations. Of course, in these cases firms will bear the burden to demonstrate clearly that the contract is reasonably drafted. This

stitute the unreadable—and thus invalid—terms with punitive terms that are strongly unfavorable to the drafter.¹⁷²

Interestingly, a few websites in this study's sample (twenty-two, or 4.4%) opted to provide some kind of clarification alongside the contract or some of its terms.¹⁷³ Arguably, this can be viewed as an attempt to make the contract more accessible to the general public.¹⁷⁴ Consider, for instance, the following example taken from Tumblr.com's sign-in-wrap agreement:

Eligibility:

You may not use the Services, provide any personal information to Tumblr, or otherwise submit personal information through the Services (including, for example, a name, address, telephone number, or email address) if you are under the Minimum Age. The Minimum Age is (i) thirteen (13), or (ii) for users in the European Union, sixteen (16) (or the lower age that your country has provided for you to consent to the processing of your personal data). You may only use the Services if you can form a binding contract with Tumblr and are not legally prohibited from using the Services.¹⁷⁵

Immediately after this term, Tumblr.com provides the following explanation, contained in a rectangular shaded frame: "You have to be the Minimum Age to use Tumblr. We're serious: it's a hard rule. 'But I'm, like, almost old enough!' you plead. Nope, sorry. If you're not old enough, don't use Tumblr. Ask your parents for a Playstation 4, or try books."¹⁷⁶

idea is beyond the scope of this Article, and the authors leave the conceptual development of such an alternative to future studies and analysis.

¹⁷² For a detailed analysis see Omri Ben-Shahar, *Fixing Unfair Contracts*, 63 STAN. L. REV. 869 (2011) (examining the optimal substitutes for excessive invalid contract terms). *But see* Eyal Zamir & Ori Katz, *Substituting Invalid Contract Terms: Theory and Preliminary Empirical Findings* (Hebrew Univ. of Jerusalem Legal Research Paper No. 19-22, 2019) (criticizing and developing Ben-Shahar's model while providing empirical evidence as to what substitute is preferred by people, how the chosen substitute changes parties' willingness to contest excessive provisions, and how it may influence judges in determining whether to strike down these excessive clauses).

¹⁷³ See *supra* note 99. Examples include Pinterest.com, Tumblr.com, and LinkedIn.com. See *Terms of Service*, PINTEREST (May 1, 2018), <https://policy.pinterest.com/en/terms-of-service> [<https://perma.cc/GSC2-SNFN>]; *Tumblr Terms of Service*, *supra* note 63; *User Agreement*, LINKEDIN (May 8, 2018), <https://www.linkedin.com/legal/user-agreement> [<https://perma.cc/VD5L-Z7KP>].

¹⁷⁴ Additionally, some websites in the survey (nineteen, or 3.8%), provided a summary of their contracts, which appeared just before (rather than alongside) the full contractual terms. See *Kinja Terms of Use*, KINJA (Mar. 24, 2017), <https://legal-supplemental.kinja.com/kinja-terms-of-use-1793094100> [<https://perma.cc/S62G-AK7F>]; *Strava Terms of Service*, STRAVA (Oct. 15, 2018), <https://www.strava.com/legal/terms> [<https://perma.cc/Q6GR-9QLT>]; *Terms of Use Agreement*, RATE MY PROFESSORS, http://www.ratemyprofessors.com/TermsOfUse_us.jsp#use [<https://perma.cc/CP5E-SRDP>].

¹⁷⁵ *Tumblr Terms of Service*, *supra* note 63.

¹⁷⁶ *Id.*

Admittedly, this seems like a dubious strategy.¹⁷⁷ On the one hand, these “clarifications” help consumers to better understand the contract. It makes reading the terms less boring and strenuous, and arguably more memorable and fun. On the other hand, these “clarifications” raise some serious concerns. For instance, consumers might be confused as to what exactly they should read: the formal term, the annotation, or perhaps both? Relatedly, what parts of the text are binding?¹⁷⁸ In case of disputes, should the courts prefer one type of text over the other; or maybe the latter should merely serve as an interpretive aid? Moreover, why should firms use the complicated and formal version, if the essence of the term can be captured in a more “relaxed” text? On top of that, can more colloquial and humoristic language lead consumers to reduce their vigilance, thus not fully realizing the legal risks and obligations the contract allocates? Lastly, will such simplification serve as a fig leaf for firms and allow these companies to avoid responsibility for drafting unreadable contracts? If this indeed becomes a more ordinary practice,¹⁷⁹ these and other concerns will be adjudicated and probably require further analysis.

Overall, for now, the FRE and F-K readability tools should probably apply. These formal linguistic readability tests, however, should serve only as a *prerequisite* legal standard for examining the readability of consumer contracts. True, poor readability scores of texts with long sentences and multisyllable words may normally indicate that the text is difficult to read. It is imperative to keep in mind, however, that websites’ contract drafters might manipulate the FRE and F-K tests to generate good readability scores despite the fact that the text is not indeed readable.¹⁸⁰ In other words, a sign-in-wrap contract with short sentences and with monosyllabic words may receive decent readability scores under the FRE and F-K tests. Yet, such a contract might be unreadable because it may be lacking a subject and verb in each sentence.

Policymakers should therefore consider requiring firms to comply with more than the common FRE and F-K readability standards. They should also prohibit firms from providing consumers with contracts that include substantial

¹⁷⁷ For an interesting and detailed discussion of similar practices and their potential positive implications, see David A. Hoffman, *Relational Contracts of Adhesion*, 85 U. CHI. L. REV. 1395 (2018).

¹⁷⁸ Interestingly, 36% (eight) of the contracts in this study’s sample that employed such clarifications explicitly noted that these annotations are non-binding.

¹⁷⁹ See *supra* note 99 (noting that only 4.4% of the sample websites included some kind of clarification alongside the agreement or some of its terms); see also Hoffman, *supra* note 177, at 1442 (stating that “the vast majority of firms, including almost all new economy platform firms, have terms and conditions that are ordinary in form and function”).

¹⁸⁰ Cf. Lauren E. Willis, *The Consumer Financial Protection Bureau and the Quest for Consumer Comprehension*, 3 RUSSELL SAGE FOUND. J. SOC. SCI. 74, 74 (2017) (noting, in the context of financial disclosures, that “firms will run circles around [regulatory disclosure requirements], misleading consumers and defying consumers’ expectations”).

grammatical flaws. One tool to consider in this context is to require firms to ensure that a large segment of their consumers do indeed possess the grammatical capacity to understand key contractual terms, rights, and obligations.¹⁸¹

Yet another path to keep in mind is technological. Detecting grammatical flaws can be facilitated by using modern machine learning platforms.¹⁸² In this respect, researchers and developers are now toying with artificial intelligence platforms and apps as means to read legal texts.¹⁸³

Although policymakers need to consider *ex ante* regulation, courts, in the meantime, can intervene *ex post*. Given the results of this study, judges can step in and relax the application of the duty to read vis-a-vis consumers who face unreadable contracts. This, of course, is not limited to sign-in-wrap contracts. Rather, judicial intervention should be determined on a case-by-case basis.

When considering legal intervention, the court's toolkit comprises a range of doctrines and principles. For starters, courts can hold there is no assent when contracts are written in an unreadable manner. Furthermore, in this context, courts can utilize and develop doctrines such as good faith,¹⁸⁴ reasonable expectations,¹⁸⁵ and perhaps procedural unconscionability.¹⁸⁶ Such an approach taken by the courts may have a significant impact in the context of consumer

¹⁸¹ See *id.* at 74–75 (recommending that the Consumer Financial Protection Bureau should be required to demonstrate periodically that consumers comprehend the most salient features of the financial products they purchased).

¹⁸² See, e.g., Gerben de Vries & Rosa Stern, *Readability Classification: Combining the Power of Machine Learning and Natural Language Processing*, WIZENOZE (Nov. 14, 2016), <https://www.wizenoze.com/language/en/readability-classification/> [<https://perma.cc/Y46L-BM4G>] (asserting that techniques of “Natural Language Processing” can assess a text’s readability).

¹⁸³ See, e.g., Lisa M. Austin et al., *Towards Dynamic Transparency: The AppTrans (Transparency for Android Applications) Project*, IT3 LAB 2 (June 2018), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3203601 [<https://perma.cc/5ZM5-Q2U6>] (describing the development of artificial intelligence technology used to analyze privacy policies).

¹⁸⁴ See U.C.C. §§ 2-305(2), 2-306(1), 2-311(1), 2-615(a) (AM. LAW INST. & UNIF. LAW COMM’N 2012) (detailing the obligation to perform a contract in good faith).

¹⁸⁵ See *Gray v. Zurich Ins.*, 419 P.2d 168, 172 (Cal. 1966) (discussing the doctrine of reasonable expectations). The doctrine was originally adopted with respect to insurance contracts. According to this doctrine, “[i]n dealing with standardized [consumer] contracts courts have to determine what the weaker contracting party could legitimately expect by way of services according to the enterpriser’s ‘calling,’ and to what extent the stronger party disappointed reasonable expectations based on the typical life situation.” *Id.* (quoting Friedrich Kessler, *Contracts of Adhesion—Some Thoughts About Freedom of Contract*, 43 COLUM. L. REV. 629, 637 (1943)); see also *Darner Motor Sales, Inc. v. Universal Underwriters Ins. Co.*, 682 P.2d 388, 394–95 (Ariz. 1984) (en banc) (upholding a similar formulation of the reasonable expectations doctrine).

¹⁸⁶ See U.C.C. § 2-302; see also Anthony M. Balloon, Comment, *From Wax Seals to Hypertext: Electronic Signatures, Contract Formation, and a New Model for Consumer Protection in Internet Transactions*, 50 EMORY L.J. 905, 914 (2001) (discussing procedural unconscionability and e-contracts); Canino, *supra* note 43, at 558–62 (discussing unconscionability and sign-in-wrap contracts).

contracts. Empirical findings indicate that firms are generally sensitive to litigation outcomes, and that they tend to draft—and sometimes change—their contracts accordingly.¹⁸⁷

At times, courts do in fact intervene when the contractual language is unreadable or confusing. For instance, the New Jersey Supreme Court recently held there to be a lack of consumer assent to a contract that had an unreadable arbitration provision.¹⁸⁸ The court cited New Jersey legislation that requires consumer contracts to be readable.¹⁸⁹ Though the court did not employ a formal readability test, it noted that “[a]n arbitration clause should at least be clear about its meaning; mutual assent is not achieved through ignorance.”¹⁹⁰ This rationale is applicable to other contractual terms as well.

B. Can Readability Indeed Make a Difference?

This Section suggests a means of targeting the problem of readability, which is the focus of this Article.¹⁹¹ The critical reader may, however, question this ambition to make consumer contracts more readable. According to this critical line of reasoning, consumers will continue to not read their contracts, regardless of how readable or unreadable they are. Making consumer contracts more readable, the argument goes, will not change consumers’ attitude and behavior. True, firms may be forced to draft readable contracts. Yet, consumers will nevertheless refrain from reading these contracts. After all, consumers are likely to view these contracts as unduly long and boring,¹⁹² they may have a (false) belief of legal protection,¹⁹³ they may dismiss contractual risks in light of over-optimism and other cognitive biases,¹⁹⁴ many might rationally prefer to

¹⁸⁷ See Marotta-Wurgler & Taylor, *supra* note 75, at 266–74 (finding, among other things, that if a term has a lower probability of enforcement, or if its enforcement is declining, firms are more likely to respond by removing it).

¹⁸⁸ *Kernahan v. Home Warranty Adm’r of Fla., Inc.*, 199 A.3d 766, 778–79 (N.J. 2019) (noting that ambiguity in the arbitration provision of a contract prevents a consumer from knowingly assenting to it).

¹⁸⁹ *Id.* at 774 (citing New Jersey’s Plain Language Law, N.J. STAT. ANN. §§ 56:12-1 to -13 (West 2012 & Supp. 2019)).

¹⁹⁰ *Id.* at 785.

¹⁹¹ See *infra* notes 192–210 and accompanying text.

¹⁹² See, e.g., OMRI BEN-SHAHAR & CARL E. SCHNEIDER, *MORE THAN YOU WANTED TO KNOW: THE FAILURE OF MANDATED DISCLOSURE* 8–9 (2014) (arguing that people cannot be expected to effectively read legal texts such as disclosures and contracts due to the excessive length of these texts); cf. Claire A. Hill & Christopher King, *How Do German Contracts Do as Much with Fewer Words?*, 79 CHI.-KENT L. REV. 889 (2004) (discussing the possible reasons for having long contracts in the United States).

¹⁹³ See, e.g., Shmuel I. Becher, *Concrete Content to Vague Standards: Behavioral Analysis of Consumer Contracts*, 33 TEL AVIV U. L. REV. 277 (2010) (Isr.).

¹⁹⁴ See, e.g., Oren Bar-Gill, *Seduction by Plastic*, 98 NW. U. L. REV. 1373, 1407 (2004) (discussing consumer over-optimism); Shmuel I. Becher, *Behavioral Science and Consumer Standard Form*

“free ride” and be enlightened through the reading of others,¹⁹⁵ or they may also have other good (and not so good) reasons to abstain from reading.¹⁹⁶

The response to this important reservation is fivefold. First, it is next to impossible to determine the impact that making contracts readable will have on consumer behavior in a void. Only once contracts become readable can it be determined whether consumers are more likely to read them. If anything, experimental evidence suggests that simplified presentation of legal materials and forms, such as disclosures, indeed improves people’s understanding of those materials.¹⁹⁷ This assertion, it should be noted, seems to be conditioned on an appropriate surrounding; for example, that sufficient focus and attention are directed to the relevant text.¹⁹⁸

Although the existing literature mainly argues that consumers do not read standardized contracts,¹⁹⁹ this study suggests that even if they wanted to do so, it would be quite impossible. It may well be the case that when consumers expect contracts to be unreadable they are dissuaded from reading them at the outset.²⁰⁰ Naturally, reading a text without being able to understand it is not an enjoyable and rewarding experience.²⁰¹

Second, one should not claim with any degree of certainty that readable contracts will revolutionize consumer behavior. Readability is not a panacea.²⁰²

Contracts, 68 LA. L. REV. 117, 120 (2007) (asserting that cognitive biases play a central role in standard form contracts); Korobkin, *supra* note 23, at 1232 (explaining that individuals are “excessively confident in their likelihood of avoiding harm”).

¹⁹⁵ Avery Katz, *The Strategic Structure of Offer and Acceptance: Game Theory and the Law of Contract Formation*, 89 MICH. L. REV. 215, 280 (1990).

¹⁹⁶ See, e.g., Robert A. Hillman & Jeffrey J. Rachlinski, *Standard-Form Contracting in the Electronic Age*, 77 N.Y.U. L. REV. 429 (2002) (detailing economic, cognitive, and social reasons that may lead consumers not to read or accurately assess consumer contracts).

¹⁹⁷ See, e.g., Michael E.J. Masson & Mary Anne Waldron, *Comprehension of Legal Contracts by Non-Experts: Effectiveness of Plain Language Redrafting*, 8 APPLIED COGNITIVE PSYCHOL. 67, 77 (1994) (asserting that a “simplif[ied] drafting style increases comprehension”); Patrick Gage Kelley et al., *Standardizing Privacy Notices: An Online Study of the Nutrition Label Approach*, CARNEGIE MELLON U. CYLAB 1 (2009), https://www.researchgate.net/profile/Lorrie_Cranor/publication/221515415_Standardizing_privacy_notices_an_online_study_of_the_nutrition_label_approach/links/0deec53984b23cf541000000/Standardizing-privacy-notices-an-online-study-of-the-nutrition-label-approach.pdf [<https://perma.cc/W4BL-PACA>].

¹⁹⁸ See Omri Ben-Shahar & Adam S. Chilton, *Simplification of Privacy Disclosures: An Experimental Test*, 45 J. LEGAL STUD. S41, S45 (2016) (“[O]ur findings suggest that when people are engaged in a real-world task that focuses their attention elsewhere, the incidental presentation of simplified disclosures does not affect their behaviour.”).

¹⁹⁹ See *supra* note 4 and accompanying text.

²⁰⁰ See, e.g., Eisenberg, *supra* note 34, at 309 (“The consumer’s reaction to the prospect of reading [text that one cannot understand] is therefore likely to be anxiety and avoidance.”).

²⁰¹ See, e.g., Becher, *supra* note 194, at 175 (“Reading a text without being able to understand it can definitely be emotionally frustrating.”).

²⁰² See, e.g., Ayres & Schwartz, *supra* note 2, at 550 (asserting that requiring contracts to be readable does not account for the problem that consumers do not want to read their contracts).

Decades of unsettled scholarship, legislation, and litigation demonstrate that the long-lasting puzzle of consumer contracts will not be solved by any silver bullet. There is reason to believe, however, that although one cannot read all consumer contracts all of the time,²⁰³ reading some contracts some of the time is a feasible strategy for many.²⁰⁴ At times, reading consumer contracts may even be surprisingly beneficial.²⁰⁵

Third, many consumers may not read their contracts *ex ante*, even if these contracts are readable. Consumers do, however, reveal a stronger tendency to read contracts *ex post*—once a dispute or a problem arises.²⁰⁶ Hence, making contracts readable can still serve consumers who tend to ignore their contracts *ex ante*.

Fourth, consumer organizations and other intermediaries may wish to study, review, rank, or comment on consumer contracts. Given the potential impact of such platforms,²⁰⁷ the benefit of making contracts more readable—even if read mainly by such third parties—should not be overlooked. Lowering the transaction costs for those who wish to serve the general pool of consumers by evaluating standardized contracts is, so it seems, a positive side effect of making these contracts readable.

Fifth, placing the burden on consumers to read unreadable contracts yields a strong sense of unfairness. Imposing on consumers the responsibility

²⁰³ With apologies to Abraham Lincoln and to Bob Marley, see THE WAILERS, *Get Up, Stand Up, on BURNIN'* (Island Records 1973).

²⁰⁴ See, e.g., Becher & Unger-Aviram, *supra* note 4, at 217 (providing evidence that “some consumers read some of their contracts some of the time”); Sovern, *supra* note 3, at 6 (reporting on a survey of consumer law professors in which 33% of respondents indicated that they occasionally read consumer contracts).

²⁰⁵ For a recent anecdote that received media attention see Allison Klein, *How This Woman Won \$10,000 by Reading the Fine Print in Her Insurance Contract*, WASH. POST (Mar. 7, 2019), https://www.washingtonpost.com/lifestyle/2019/03/07/how-this-woman-won-by-reading-fine-print-her-insurance-contract/?tid=ss_mail [<https://perma.cc/5D2A-SG3A>]. For a more general and systematic discussion of how consumer contracts may confer benefits on a handful of informed consumers see David Gilo & Ariel Porat, *Viewing Unconscionability Through a Market Lens*, 52 WM. & MARY L. REV. 133 (2010).

²⁰⁶ See, e.g., Shmuel I. Becher & Tal Z. Zarsky, *E-Contract Doctrine 2.0: Standard Form Contracting in the Age of Online User Participation*, 14 MICH. TELECOMM. & TECH. L. REV. 303, 315 (2008) (“Most of the reasons for the lack of effective reading and comprehension of ‘non-salient’ terms *ex ante* do not apply to the *ex post* context.”); Becher & Unger-Aviram, *supra* note 4, at 214–15 (noting that many more consumers indicated “they would read the contract *ex post* (rather than *ex ante*)”); Meirav Furth-Matzkin, *On the Unexpected Use of Unenforceable Contract Terms: Evidence from the Residential Rental Market*, 9 J. LEG. ANALYSIS 1, 7 (2017) (finding that tenants are likely to be deterred by the terms of their lease agreements once a dispute arises even if those terms are unenforceable).

²⁰⁷ See, e.g., Becher & Zarsky, *supra* note 206, at 306–07 (discussing in detail the importance of online information flow and the way it may impact the scope and nature of legal intervention in consumer contracts).

to perform a task they are unable to accomplish due to firms' behavior is hard to legitimize. Restoring (some of) people's trust in the ability of the legal system to level the consumer-seller playing field is itself a worthwhile objective.²⁰⁸

Along somewhat similar lines, consumers have the right to know what their contracts say, even if they choose not to pursue this right.²⁰⁹ Promoting a reality in which people perceive the justice system as fair is important for its effectiveness.²¹⁰

C. Can Market Forces Discipline Firms?

One might argue that readability may not be a problem if other tools and mechanisms efficiently discipline sellers. To give one example, proponents of the "informed minority" thesis may not find this study's results troubling. According to the informed minority model, it is not necessary that all consumers read all their contracts all of the time.²¹¹ Rather, in competitive markets, a minority of sophisticated consumers who read their contracts and shop for better ones may suffice to discipline sellers and encourage them to draft fair terms.²¹² Following this logic, the fact that most consumers cannot read their contracts does not pose a serious problem as long as a significant minority of consumers can. In a competitive market, the supplier will fear losing these informed marginal consumers to a competitor, who may offer a better contract.²¹³

In spite of its appeal, there are many reasons to question this idea. For example, firms can offer all consumers the same contract yet neutralize the effect of the informed consumers by discriminating in their favor and providing them with favorable treatment.²¹⁴ Sophisticated and aggressive consumers may be

²⁰⁸ Cf. Shmuel I. Becher & Jessica C. Lai, *In Consumer Protection We Trust? Re-thinking the Legal Framework for Country of Origin Cases*, 55 SAN DIEGO L. REV. 539, 556 (2018) (discussing the importance of trust for consumers, sellers, economic flourishing, and wellbeing).

²⁰⁹ We thank Eyal Zamir for making this point.

²¹⁰ See, e.g., Paul H. Robinson & John M. Darley, *The Utility of Desert*, 91 NW. U. L. REV. 453, 497 (1997) ("Studies suggest that increasing the law's moral credibility can enhance its compliance power . . .").

²¹¹ See, e.g., Alan Schwartz & Louis L. Wilde, *Intervening in Markets on the Basis of Imperfect Information: A Legal and Economic Analysis*, 127 U. PA. L. REV. 630, 655 (1979) ("[A] market may behave competitively if as many as two thirds of the consumers in it know only the prices they themselves pay. . . .").

²¹² See *id.* ("[I]f fewer [than two thirds of] consumers . . . are informed . . . many firms [would] still charg[e] the competitive price.").

²¹³ See *id.* at 641 (suggesting that, when all else is the same, perfectly informed consumers in a competitive market will purchase from the firms that provide the best terms).

²¹⁴ See, e.g., R. Ted Cruz & Jeffery J. Hinc, *Not My Brother's Keeper: The Inability of an Informed Minority to Correct for Imperfect Information*, 47 HASTINGS L.J. 635, 656 (1996) (explaining why ex post discrimination between the informed and uninformed undermines the efficacy of the

aware of this practice, and thus may not be too bothered by the one-sided contract.²¹⁵ In addition to the theoretical limitations of the informed minority model, this theory has also received a number of empirical critiques. As noted earlier, studies indicate that the actual number of consumer contract readers is far smaller than the number of readers required by the informed minority model.²¹⁶

But even if one accepts the informed minority argument, there are nonetheless at least two good reasons to be worried about this study's findings. First, the more complex and complicated contracts are, the less likely there will be a significant informed minority.²¹⁷ Stated differently, as contracts become easier to read and understand, it is more likely that a sufficient number of consumers will indeed read them. If we want the informed minority to discipline sellers, we should make it as easy as possible to form such a minority. Second, unreadable contracts impose higher transaction costs on those consumers who want to become informed.²¹⁸ Given the positive contribution of these informed consumers, it is hard to think of a legitimate reason to make it harder and costlier for them to become informed.

Although scholars have seriously questioned the "informed minority" theory, alternative arguments maintain that other market-based tools may yield an efficient equilibrium.²¹⁹ One such claim is that one way or another, unfair contract terms will come to light. Exposure of these terms, especially in light of online realities that allow expansive information flows, will harm the dealers' reputations.²²⁰ Therefore, firms that worry about their reputation will avoid

informed minority thesis); *see also* Becher, *supra* note 2, at 746 (asserting that discrimination between informed and uninformed consumers might implicate the informed minority theory); Becher & Zarsky, *supra* note 27, at 99–100 (discussing circumstances in which such ex post discrimination may be worrisome and justify legal scrutiny).

²¹⁵ Furthermore, consumer heterogeneity might prevent the marginal consumer group's activity from being of use to consumers as a class. One prominent concern in the economic literature is that dealers may manufacture goods that suit the preferences of marginal consumers, while disregarding those of other consumers. *See, e.g.,* A. Michael Spence, *Monopoly, Quality, and Regulation*, 6 BELL J. ECON. 417, 417 (1975) (noting that an "increase in quality increases the dollar benefits of the product to the marginal consumer" but such an increase "is not necessarily an accurate measure of the social benefits of the increase in quality").

²¹⁶ *See, e.g.,* Bakos et al., *supra* note 4; Becher & Unger-Aviram, *supra* note 4.

²¹⁷ *Cf. Cruz & Hinck, supra* note 214, at 657 ("The single most important determinant of informed consumers is the cost of information.").

²¹⁸ *Cf. Marotta-Wurgler & Taylor, supra* note 75, at 275 (asserting that as contracts have become harder to read, "the cost of becoming informed . . . has increased").

²¹⁹ *See, e.g.,* Bebchuk & Posner, *supra* note 27, at 827 (discussing how reputational concerns might prevent a seller "from behaving opportunistically").

²²⁰ *See id.* at 830 (noting that sellers exhibiting poor practices will experience reputational harm).

the use of one-sided contracts.²²¹ Alternatively, rational consumers would respond to unreadable contracts by lowering their willingness to pay, perhaps assuming the worst-case scenario.²²²

Although these arguments in favor of a market-based approach have merit, they are not entirely persuasive. The assumption that one-sided contracts will grievously injure the vendor's reputation is doubtful for a variety of reasons.²²³ For starters, for that to happen, consumers—and the public—must care about their contracts enough to generate awareness of the issue. This is most often not the case,²²⁴ given, among other things, that these contracts are often unreadable, as this study has shown.

In addition, sellers' concern for reputation is more likely to take the form of waiving enforcement of biased terms *ex post*, rather than excluding them *ex ante*.²²⁵ Such a strategy allows firms more flexibility and discretion, and it portrays them as kind, consumer friendly, or even generous.²²⁶ Furthermore, and most importantly, empirical evidence suggests that consumer contracts are indeed one-sided,²²⁷ indicating that overall reputation is an insufficient tool on which to rely.

The assumption that consumers will respond to unreadable contracts by lowering their willingness to pay is also dubious. For that to happen, consumers first need to be aware of the information that is not available for them to evaluate. Then they need to draw the conclusion that this missing information is unfavorable, thus adjusting their willingness to transact. Such a strategy, however, attributes much rationality and sophistication to consumers, although a

²²¹ Becher & Zarsky, *supra* note 206, at 318 (noting that reputation-conscious firms will avoid “using conspicuously biased provisions that might be easily discovered”).

²²² Cf. Jan-Benedict E.M. Steenkamp, *The Relationship Between Price and Quality in the Marketplace*, 136 DE ECONOMIST 491, 491 (1988) (Neth.) (“Well-informed consumers will ‘discipline’ the market so that price differences will reflect true variation in quality.”).

²²³ See generally EYAL ZAMIR & DORON TEICHMAN, BEHAVIORAL LAW AND ECONOMICS 306–12 (2018) (discussing market solutions and reviewing the role of reputation).

²²⁴ Becher & Zarsky, *supra* note 206, at 317 (“[I]mbalanced contractual provisions rarely engage the mass media, which must tailor their content to meet a broad audience with a limited attention span in a very competitive setting. Aggrieved *ex post* consumers might find their story ‘hard to sell’ to the mass media, given their general interest in sensationalism.”).

²²⁵ Becher & Zarsky, *supra* note 27, at 85–87 (noting that the waiver of contractual provisions can be a tool for “enhancing firms’ reputations”).

²²⁶ *Id.* at 86 (“Faced with a firm’s generous response to an alleged problem, some consumers will naively accept such kindness without second-guessing it . . .”).

²²⁷ See Marotta-Wurgler & Taylor, *supra* note 75, at 257 (noting that most individual provisions in the contracts studied became “more pro-seller over time relative to the default rules,” and describing other ways in which the end user license agreements restricted the users’ ability to use the software).

large body of research indicates that this is often not the case.²²⁸ Moreover, for most consumers much of the language of standard form contracts is usually a hidden, non-salient attribute.²²⁹ Consumers do not pay attention to these terms,²³⁰ cannot properly evaluate them,²³¹ and therefore do not price them rationally. Indeed, empirical data shows that when facing a lack of information, consumers do not assume the worst, and therefore do not lower their willingness to pay in the same way economists assume they will.²³²

D. Readability in Context

To be sure, this analysis should not lead us to ignore other concerns embedded in the law of standard form contracts. Consumers may happily accept biased or unfair terms, even when fully informed by readable contracts.²³³ Although one can hope that making contracts more readable will create further pressure on firms to draft clear and balanced contracts, there is no guarantee that this will happen.²³⁴ True, anecdotal evidence suggests that simplifying

²²⁸ Endless studies confirm (and debate) that proposition. *See, e.g., supra* notes 193–200 and accompanying text. *See generally* OREN BAR-GILL, *SEDUCTION BY CONTRACT: LAW, ECONOMICS, AND PSYCHOLOGY IN CONSUMER MARKETS* (2012) (arguing that mandated disclosure would prevent consumers from entering into contracts that impose significant long-term costs).

²²⁹ *See, e.g.,* Todd D. Rakoff, *Contracts of Adhesion: An Essay in Reconstruction*, 96 HARV. L. REV. 1173, 1252 (1983) (proposing that invisible terms in consumer standard form contracts should be presumed unenforceable); *see also* Becher, *supra* note 2, at 753 (discussing the “bounded rationality” of consumers); Korobkin, *supra* note 23, at 1207 (arguing that consumers do not, in fact, behave rationally in the marketplace).

²³⁰ Becher, *supra* note 2, at 731 (noting that consumers sometimes ignore standard form contract terms). This tendency has led some firms to include significant rewards in the fine print, including monetary ones. *See* Klein, *supra* note 205 (reporting on an insurance firm that employed a buried term promising the first reader \$10,000).

²³¹ *See* Barnes, *supra* note 5, at 236 (positing that consumers are unlikely to comprehend the terms of the standard form contracts to which they are parties).

²³² *See, e.g.,* Sunita Sah & Daniel Read, *Disclosure and the Dog That Didn't Bark: Consumers Are Too Forgiving of Missing Information*, 2017 ACAD. MGMT. PROC. 1, <https://journals.aom.org/doi/abs/10.5465/AMBPP.2017.76> [<https://perma.cc/4KFX-82ZG>] (presenting five experiments that show that, contrary to standard theory, people generally do not respond to missing information and thus do not assume the worst).

²³³ *Cf.* Florencia Marotta-Wurgler, *Does Contract Disclosure Matter?*, 168 J. INSTITUTIONAL & THEORETICAL ECON. 94, 113–14 (2012) (finding that exposure to a biased contractual term in a software license agreement did not impact the likelihood that consumers would indeed purchase the product).

²³⁴ Furthermore, one may argue that businesses would respond to readability duties by increasing the prices of goods and services. Arguably, such a move would allow businesses to compensate for the costs involved, including those entailed in not being able to incorporate the terms they prefer in their contracts. Slightly restated, according to this argument, sellers are likely to respond by externalizing the costs to the general pool of consumers. Even if this theoretical concern materializes, however, it will not necessarily lead to inefficiencies. Readable terms are likely to reduce information gaps and make the transaction as a whole more transparent. Hence, even if consumers end up paying higher

contracts may coincide with more balanced terms.²³⁵ Perfectly readable contracts, however, may yet use legal terms of art that are incomprehensible to the average consumer. Such readable contracts may as well be unconscionable, excessively long, lacking proper sub-headings, written in rather small font, not easily found, or deliberately presented to consumers at a late or uncomfortable time when reading becomes unlikely. Thus, courts should remain vigilant as ever when a contract is readable.²³⁶

Indeed, readability is merely one piece of the puzzle—even with respect to consumers’ comprehension of their form contracts.²³⁷ Tackling all of the problems and concerns that consumer contracts raise requires experimenting with some innovative and creative ideas.²³⁸ The fact that consumer contracts are unreadable gives more reason to explore this path.

prices for better terms, readability rules may help them avoid contract terms they cannot evaluate and shop among. See Shmuel I. Becher, A “Fair Contracts” Approval Mechanism: Reconciling Consumer Contracts and Conventional Contract Law, 42 U. MICH. J.L. REFORM 747, 801 (2009) (making a similar argument in a different context).

²³⁵ See Hoffman, *supra* note 177, at 1443 (explaining that, while the surveyed firms simplified their contracts by reducing legalese and “focus[ing] on simple, declarative sentences,” they also forwent some one-sided terms that in turn “increased their formal legal exposure”).

²³⁶ Cf. Tess Wilkinson-Ryan, *The Perverse Consequences of Disclosing Standard Terms*, 103 CORNELL L. REV. 117, 121 (2017) (warning that increased readability might be counterproductive to consumers because readable terms can be seen as more legitimate, even if they are one-sided and unfair).

²³⁷ See Masson & Waldron, *supra* note 197, at 79 (“[P]lain language drafting alone will take us only part way to the goal of making the law more broadly understood.”).

²³⁸ The literature provides some interesting ideas for coping with the problem of standard form contracting. See, e.g., LOUIS KAPLOW & STEVEN SHAVELL, FAIRNESS VERSUS WELFARE 217 n.146 (2006) (mentioning the possibility of administrative control over consumer form contracts); Ayres & Schwartz, *supra* note 2, at 553 (proposing the use of warning boxes as a response to the “no-reading” problem); Becher, *supra* note 234, at 750 (proposing administrative control over—and pre-approval of—consumer contracts, while also examining, among other things, the possibility of contract rating); Becher & Zarsky, *supra* note 206, at 306 (asserting that online information flow is a potential mechanism to discipline sellers); Hoffman, *supra* note 177, at 1443 (discussing humoristic and informal language as means to communicate with users); Todd D. Rakoff, *The Law and Sociology of Boilerplate*, 104 MICH. L. REV. 1235, 1243 (2006) (pointing out suggestions that “expert administrative agencies, nonprofit trade associations, law firms that are leaders in a field, and even (although somewhat uncertainly) publicity-minded watchdog groups” as potential bodies “given the job of drafting, interpreting, applying, or rejecting boilerplate” in relation to consumer contracts) (footnotes omitted); see also Jacob Hale Russell, *Unconscionability’s Greatly Exaggerated Death*, 53 U.C. DAVIS L. REV. (forthcoming) (suggesting that the doctrine of unconscionability be tailored to the individual consumer in order to better address the problem of consumer heterogeneity); Lauren E. Willis, *Performance-Based Remedies: Ordering Firms to Eradicate Their Own Fraud*, 80 LAW & CONTEMP. PROBS. 7, 30 (2017) (proposing that firms should have the burden to reduce consumers’ confusion and should be required to demonstrate that their consumers comprehend key features of the firm’s products and services). See generally Clayton P. Gillette, *Pre-Approved Contracts for Internet Commerce*, 42 HOUS. L. REV. 975 (2005) (examining the idea of pre-approval of online consumer contracts).

CONCLUSION

Millions of American consumers use the services of highly popular U.S. websites on a regular basis. Under the duty to read doctrine, these consumers are legally expected to read the sign-in-wrap contracts that they agree to when signing up to the services offered by these websites. Accordingly, courts typically enforce these agreements against consumers even if consumers do not read them.

Sign-in-wrap contracts permit online firms to contract with millions of users, with no negotiation, and without verifying that the contract was read (let alone understood). Although consumers are legally presumed to read these contracts, websites are not obliged to provide consumers with readable ones. This legal reality raises an imperative question: are sign-in-wrap contracts, which consumers are obliged to read, in fact readable? Is it fair and efficient to impose the duty to read on consumers who allegedly accept these contracts?

According to the findings of this study, the disturbing answer to these questions is a resounding “no.” Lacking a clear and strong incentive to draft readable agreements, firms often utilize unreadable texts as their contracts. By insisting on applying the duty to read in these cases, courts undermine notions of both fairness and efficiency.